PYG 345/4.17/8
No. 188

Progress Report 188
1975

OIL AND GAS DEVELOPMENTS IN PENNSYLVANIA IN 1974

William S. Lytle

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF
TOPOGRAPHIC AND GEOLOGIC SURVEY
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PENNSYLVANIA GEOLOGICAL SURVEY
FOURTH SERIES
HARRISBURG

1975

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ABSTRACT

Drilling for oil increased 29 percent in 1974 over that of 1973 while gas well drilling remained about the same. A new drilling depth record of 21,460 feet was established by the No. 1 Leonard Svetz well in Somerset County in the Upper Cambrian. Seismic activity was down from 161 crew-weeks in 1973 to 123 crew-weeks in 1974 in 28 counties, with most of the activity being Vibroseis, costing operators about $2,480,000. Oil production increased as well as gas production and the proved reserves of both oil and gas. The price of new and stripper crude oil remained at $10.65 per barrel in the Bradford District during the entire year while by the year's end all companies were paying at least 50 cents per thousand cubic feet for new natural gas.

The total number of highlight wells increased from 69 in 1973 to 70 in 1974. The most active gas area was in Indiana County with 319 new gas wells, up 7 from 1973. Venango and Warren Counties were the most active oil areas with 224 and 172 wells drilled respectively.

Pennsylvania grade crude oil production increased 4 percent to 3,341,000 barrels, while production of Corning grade crude declined 24 percent to 58,000 barrels. Shallow gas production increased 5 percent to 69,728 MMcf, and deep gas increased 10 percent to 13,007 MMcf. Gas storage capacity decreased to 728,110 MMcf, and stored gas reserves decreased 9 percent to 585,789 MMcf.

Other well completions, including service, gas storage and old well workovers, increased 12 percent in 1974. The total of all wells reported in 1974 was up by 137 wells, or 10 percent greater than the 1973 total.

Of the 1,209 primary wells reported, 101 were exploratory and 1,108 were development. This is a 2 percent increase in exploratory wells and an 11 percent increase in development wells from 1973. Exploratory completions were 53 percent successful and development completions 98 percent successful.

Exploratory footage was down 6 percent and development footage was up 4 percent from that of 1973. The average depth of all wells was 2,139 feet, 188 feet less than in 1973.

Secondary and tertiary recovery projects remained active. The increase in the price of crude has made the Maraflood tertiary operation a profitable recovery process.

INTRODUCTION

Representative Gamma-ray Logs from Shallow and Deep Wells, Western Pennsylvania (Progress Report 178) should be referred to for stratigraphic information. Contained in this publication are three shallow gamma-ray logs (two from the oil belt and one from the gas fields) and one deep gamma-ray log on which shallow and deep producing intervals have been designated.

Part I of this report contains comments on wells in the Commonwealth with good completions or of special note for other reasons. Part II contains the statistics and review of industry activities for the year, and Part III is the summarized records of the 1974 deep wells.

ACKNOWLEDGEMENTS

Appreciation is hereby extended to the Oil and Gas Division of the Bureau of Land Protection and Reclamation, Pennsylvania Department of Environmental Resources, for the cooperation of that Division in sharing the drillers' logs which are submitted to them by the operators under the oil and gas law.

We also acknowledge with appreciation the cooperation of the Pennsylvania Crude Oil Association; the Pennsylvania Oil, Gas, and Minerals Association; the Pennsylvania Game Commission; the American Gas Association; the American Petroleum Institute; Petroleum Information; the Pennsylvania Department of Environmental Resources' Bureau of Forestry, Division of Minerals.

Appreciation is extended to all operators and companies who released natural gas production statistics and other data.

PART I. COMPLETION HIGHLIGHTS FOR 1974

SHALLOW HIGHLIGHTS

The lower limits of initial production used in considering a shallow well (Upper Devonian or younger) as a highlight well were established at 50 bopd or more and/or over 2 MMcfgpd.

There were 70 shallow highlight wells reported in 1974. A number of operators fail to report a well's initial production to the regulatory agency. Therefore, there are probably several highlight wells that do not appear in the above figure. The shallow highlight wells composed 5.8 percent of the total exploratory and development wells reported (Table 5). Table 1 gives highlight well statistics.

Figure 1 shows the distribution of the highlight wells. The following is a brief description of those highlight occurrences about which information was released through the Oil and Gas Division of the Bureau of Land Protection and Reclamation.

Pre-Speechley Gas Development

The pre-Speechley (Upper Devonian Zone B) development gas play in the west-central part of the State remained about the same as that in 1973 with 396 gas wells drilled in a five-county area in 1974 compared with 405 drilled in the same area in 1973. The big decrease was in Armstrong County where only 13 gas wells were completed as compared with 37 in 1973. Indiana County had 319 gas well completions, up 7 from 1973. Only 14 gas highlight wells were completed in this zone compared to 29 in 1973. The following wells were completed with potentials in MMcfgpd: Clearfield County in the Big Run field 2.1, Salem pool 2.9; Indiana County in the Cheese Run pool 2.1, 2 wells with 4.2, 4.5, Elders Ridge field 4.6, Juneau field 3.2, Lochvale pool 2.9, Marion Center field 3.0, Plumville field 2.0, Richmond field 2.0, Tannery pool 3.1; and Jefferson County in the Big Run field 2.8.

Sixteen highlight oil wells were reported producing from this zone as follows, with potentials in bopd: McKean County, Bradford pool 60, 200, Cooper field 55, 65, Lewis Run pool 50, Marshburg field 50, and Warren County Cooper field 2 wells with 135, 3 wells 140, 1 well 145, 4 wells 150.

Table 1. Shallow and Deep Highlight Well Statistics

	1974			1973		
Fields and Pools with highlight wells	21			27		
Counties with highlight wells	6			8		
	Wells			Wells		
Producing Zones	*Gas*	*Oil*	*Total*	*Gas*	*Oil*	*Total*
Oriskany	0	0	0	1	0	1
Pre-Speechley in Zone B*	14	16	30	29	3	32
Speechley or younger in Zone B*	0	39	39	0	36	36
Zone D*	0	1	1	0	0	0
Totals	14	56	70	30	39	69

* Zone of Upper Devonian rocks established in Progress Report 178

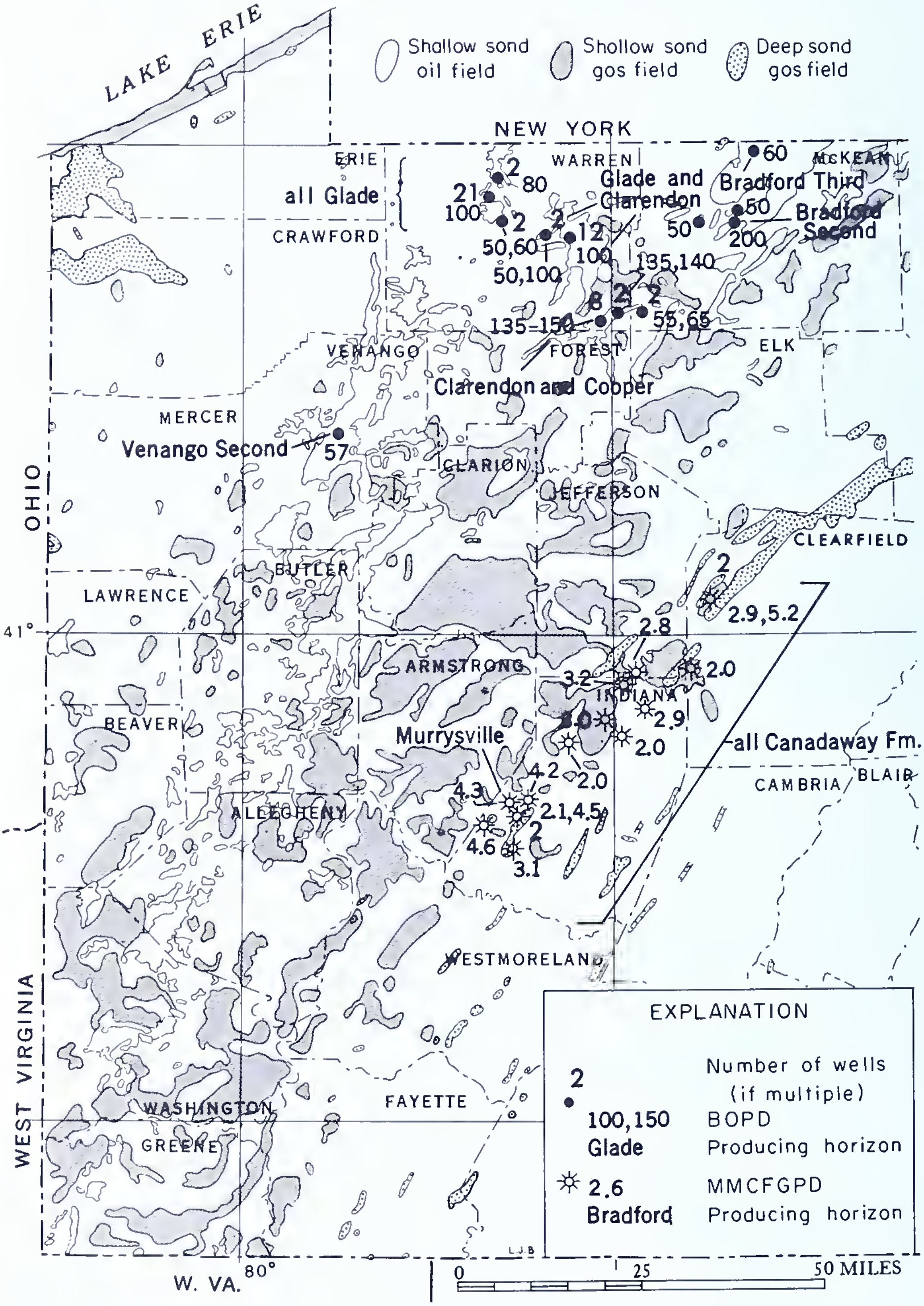

Figure 1. Highlight wells reported in 1974.

Glade Sandstone Oil Development

There are 39 crude oil highlight wells that are located in Warren County and produce from the Glade sand of the lower part of the Conneaut Group (Upper Devonian). Below are shown the fields and pools in which the wells are located and their initial productions in bopd: Chandlers Valley pool 2 with 80, Glade field 100, Mathews Run pool 6 with 100, Morrison Run field 11 with 100, Sill Run field 50, 100, and Youngsville field 50, 60, and 15 with 100.

Other Highlights

A Zone D well in the Oil City-Rouseville field in Venango County had an initial production of 57 bopd. There were no deep (Middle Devonian or older) highlight wells during 1974.

PART II. OIL AND GAS INDUSTRY ACTIVITY FOR 1974

BASIS FOR STATISTICS

Local industry statistics herein reported are consistent with figures submitted to national industry organizations. Consequently, drilling and completion data are entirely based on drillers' records and location plats forwarded to the Pennsylvania Geological Survey by the Oil and Gas Division of the Bureau of Land Protection and Reclamation of the Department of Environmental Resources, the administrative and regulatory agency for the Oil and Gas Laws. Only those wells for which records and plats have been received within the year are reported. This includes wells drilled in prior years for which records were submitted and received in 1974. It does not include 1974 wells completed for which records had not been submitted within the year.

Oil production and reserve data were obtained from the American Petroleum Institute and gas production and reserve data were obtained from the American Gas Association.

PREVIOUS COMPILATIONS

The summarized records of deep wells (those which reach rocks of Middle Devonian age or older) are shown in Table 14 and the locations of all exploratory wells are on Figure 4 (centerfold). For those deep wells drilled prior to 1950, the summarized records and other information on the Commonwealth's oil and gas activities are to be found in Mineral Resource Report 31 (Pennsylvania Geological Survey). Similar information for the 1950 to 1954 period was published in Mineral Resource Report 39, and for the 1955 to 1959 period in Mineral Resource Report 45.

For the years 1960 through 1973, this information was published annually in Progress Reports 158, 160, 165, 166, 168, 172, 173, 175, 177, 181, 183, 184, 186 and 187 of the Pennsylvania Geological Survey. Oil and gas developments in the shallow sands (Upper Devonian or younger) are described in Mineral Resource Report 45 and in Progress Reports 135, 139, 143, 144, 147, 150, 151, 154, 155, 157, 158, 160, 165, 166, 168, 172, 173, 175, 177, 181, 183, 184, 186 and 187.

A list of deep-well samples on file with the Survey was published in the Survey's Catalogue of Deep Well Samples and Geophysical Logs to January 1, 1959 (W. R. Wagner, Inf. Circ. 16). Supplemental lists were published in Progress Reports 157, 158, 160, 165, 166, 168 and 173. These and other deep shallow well samples, geophysical logs, and other well data are also on file with the Survey. An inventory of all deep and shallow well samples is brought up to date annually. It is available on request at cost of reproduction from Survey's Pittsburgh office.

INDICATED STATUS OF LOCAL INDUSTRY

Oil well completions, 667 in 1974, increased 29% over the 516 completions in 1973. Pennsylvania Grade crude oil production increased from 3,206 M bbls. in 1973 to 3,341 M bbls. in 1974 or a 4% increase, while oil reserves increased 28% to 49,696 M bbls. from 38,837 M bbls. in 1973. The price increase for a barrel of crude oil made areas economical to operate that were previously sub-marginal or marginal to the extent that the reserves were increased as shown above. Corning Grade crude oil production declined 24% to 58,000 bbls.

Gas well completions declined slightly from 482 in 1973 to 469 in 1974. Completions of wells classified as oil and gas wells declined 44%, from 9 in 1973 to 5 in 1974. Reserves of gas increased 6% while production increased 5%. The amount of gas in storage decreased 11%.

Drilling and Completions

The breakdown of completions by county is shown in Table 2, and the old wells drilled deeper in Table 3.

Table 4 shows that drilling for oil and gas increased 10% in 1974 over that in 1973. During the year exploratory and development drilling increased 2 and 11 percent respectively from those of 1973, as shown on Table 5.

The total footage in 1974 was up 6% with respect to the amount drilled in 1973 (Table 6).

The 1974 reported discoveries are listed in Table 7 and selected reported exploratory failures are listed in Table 8. The locations of all of the

Table 2. *Well Completions in Pennsylvania, 1974**

	TOTAL		GAS			OIL			OIL & GAS				DRY	
County	*No. of Wells*	*Aver. Total Depth (feet)*	*No. of Wells*	*Aver. Init. Open-Flow (Mcfgpd)*	*Aver. Total Depth (feet)*	*No. of Wells*	*Aver. Init. Production (Bopd)*	*Aver. Total Depth (feet)*	*No. of Wells*	*Aver. Init. Open-Flow (Mcfgpd)*	*Aver. Init. Production (Bopd)*	*Aver. Total Depth (feet)*	*No. of Wells*	*Aver. Total Depth (feet)*
Armstrong	14	3,488	13	433	3,458	0	0	0	0	0	0	0	1	3,868
Butler	4	3,207	1	169	7,603	0	0	0	0	0	0	0	3	1,742
Cambria	2	3,813	1	311	4,004	0	0	0	0	0	0	0	1	3,622
Cameron	4	4,944	1	63	6,158	0	0	0	0	0	0	0	3	4,539
Centre	1	7,138	0	0	0	0	0	0	0	0	0	0	1	7,138
Clarion	3	2,081	2	158	2,670	0	0	0	0	0	0	0	1	903
Clearfield	22	3,873	18	1,121	3,668	0	0	0	0	0	0	0	4	4,800
Crawford	19	3,808	8	523	4,095	3	1	861	4	625	11	4,199	4	5,055
Elk	7	3,344	3	231	2,621	0	0	0	0	0	0	0	4	3,887
Erie	6	3,438	3	783	3,098	0	0	0	0	0	0	0	3	3,779
Fayette	9	5,472	4	1,181	4,385	0	0	0	0	0	0	0	5	6,342
Forest	108	847	0	0	0	107	**	797	0	0	0	0	1	6,192
Indiana	322	3,671	319	844	3,660	0	0	0	0	0	0	0	3	4,799
Jefferson	21	3,494	19	553	3,591	2	4	2,580	0	0	0	0	0	0
Lawrence	1	945	0	0	0	0	0	0	0	0	0	0	1	945
McKean	162	1,831	11	523	2,777	141	**	1,704	1	0	0	2,014	9	2,641
Mercer	14	1,510	2	215	5,380	12	15	865	0	0	0	0	0	0
Potter	7	4,821	0	0	0	3	0	1,503	0	0	0	0	4	7,310
Somerset	2	7,374	1	570	8,887	0	0	0	0	0	0	0	1	5,860
Tioga	2	10,692	0	0	0	0	0	0	0	0	0	0	2	10,692
Venango	233	803	1	110	6,085	224	**	777	0	0	0	0	8	872
Warren	175	1,097	0	0	0	172	45	1,100	0	0	0	0	3	962
Washington	2	4,436	2	741	4,436	0	0	0	0	0	0	0	0	0
Westmoreland	29	3,803	27	682	3,810	0	0	0	0	0	0	0	2	3,703
TOTAL	1,169	2,213	436	791	3,682	664	**	1,071	5	500	9	3,762	64	3,929

* Does not include service wells, miscellaneous wells, gas storage wells, stratigraphic/core tests or old wells drilled deeper.
** Initial productions for majority of wells not given.

Table 3. Old Wells Drilled Deeper in Pennsylvania, 1974

	TOTAL		GAS			OIL			DRY	
County	*No. of Wells*	*Aver. Amt. Deepened (feet)*	*No. of Wells*	*Aver. Init. Open-Flow (Mcfgpd)*	*Aver. Amt. Deepened (feet)*	*No. of Wells*	*Aver. Init. Production (Bopd)*	*Aver. Amt. Deepened (feet)*	*No. of Wells*	*Aver. Amt. Deepened (feet)*
Armstrong	4	1,716	2	136	1,199	0	0	0	2	2,233
Butler	1	971	1	2	971	0	0	0	0	0
Clarion	1	1,632	1	45	1,632	0	0	0	0	0
Clearfield	2	1,527	2	474	1,527	0	0	0	0	0
Elk	2	314	2	36	314	0	0	0	0	0
Fayette	1	819	1	200	819	0	0	0	0	0
Greene	1	1,733	1	250	1,733	0	0	0	0	0
Indiana	15	996	14	925	1,036	0	0	0	1	439
Jefferson	8	1,154	7	552	1,310	0	0	0	1	62
McKean	1	392	0	0	0	1	2	392	0	0
Venango	2	691	1	50	1,106	1	26	276	0	0
Warren	1	209	0	0	0	1	0	209	0	0
Westmoreland	1	1,487	1	134	1,487	0	0	0	0	0
TOTAL	40	1,084	33	569	1,137	3	9	292	4	1,242

Table 4. *Drilling and Completions Reported, 1974*

Classification			*1974*	*1973*	*% Change*
SHALLOW	New	Gas	414	432	– 4
		Oil	664	514	+ 29
		Oil & Gas	1	4	– 75
		Dry	41	45	– 9
		Total	1119	995	+ 12
	Deepened	Gas	33	32	+ 3
		Oil	3	2	+ 50
		Dry	3	11	– 73
		Total	39	45	– 13
	Sub Total	Gas	447	464	– 4
		Oil	667	516	+ 29
		Oil & Gas	1	4	– 75
		Dry	44	56	– 21
		Total	1159	1040	+ 11
DEEP	Deepened & New	Gas	22	18	+ 22
		Oil & Gas	4	5	– 20
		Dry	24*	36	– 33
		Total	50	59	– 15
PRIMARY SUB TOTAL		Gas	469	482	– 3
		Oil	667	516	+ 29
		Oil & Gas	5	9	– 44
		Dry	68	92	– 26
		Total	1209	1099	+ 10
	Misc.	Service (Gas & Water Injection Wells)	114	43	+165
		Gas Storage	12	14	– 14
		Old Well Workovers	123	165	– 25
		TOTAL ALL WELLS	1458	1321	+ 10

* Includes 1 old well drilled deeper

Table 5. *Exploratory and Primary Development Reported, 1974**

	Type Well	*1974*	*1973*	*% Change*
EXPLORATORY	Gas	42	41	0
	Oil	12	3	+300
	Dry	47	55	– 15
	Total (% Successful)	101 (53%)	99 (44%)	+ 2
DEVELOPMENT	Gas	427	441	– 3
	Oil	655	513	+ 28
	Dry	21	37	– 43
	Oil & Gas	5	9	– 44
	Total (% Successful)	1108 (98%)	1000 (96%)	+ 11
TOTALS	Gas	469	482	– 3
	Oil	667	516	+ 21
	Dry	68	92	– 26
	Oil & Gas	5	9	– 44
	Grand Total (% Successful)	1209 (94%)	1099 (92%)	+ 10

* Above figures include old wells drilled deeper

exploratory tests are shown in Figure 4. Figure 2 is a graph of the annual rate of shallow activity in the Commonwealth from 1950 to 1974, while Figure 3 shows the annual rate of deep exploration and development from 1930 to 1974.

At the end of 1974 a total of 3,278 deep wells had been drilled since the beginning of exploration in the deeper horizons. Of the 3,278 deep wells, 1,749 were gas wells, 141 oil and gas wells, 1,163 dry holes, 219 gas storage wells, 4 for waste disposal, and 2 for testing drilling equipment.

In addition to the 67 dry holes that were drilled in 1974 and plugged and abandoned, there were 909 old oil wells and 113 old gas wells that were plugged and abandoned.

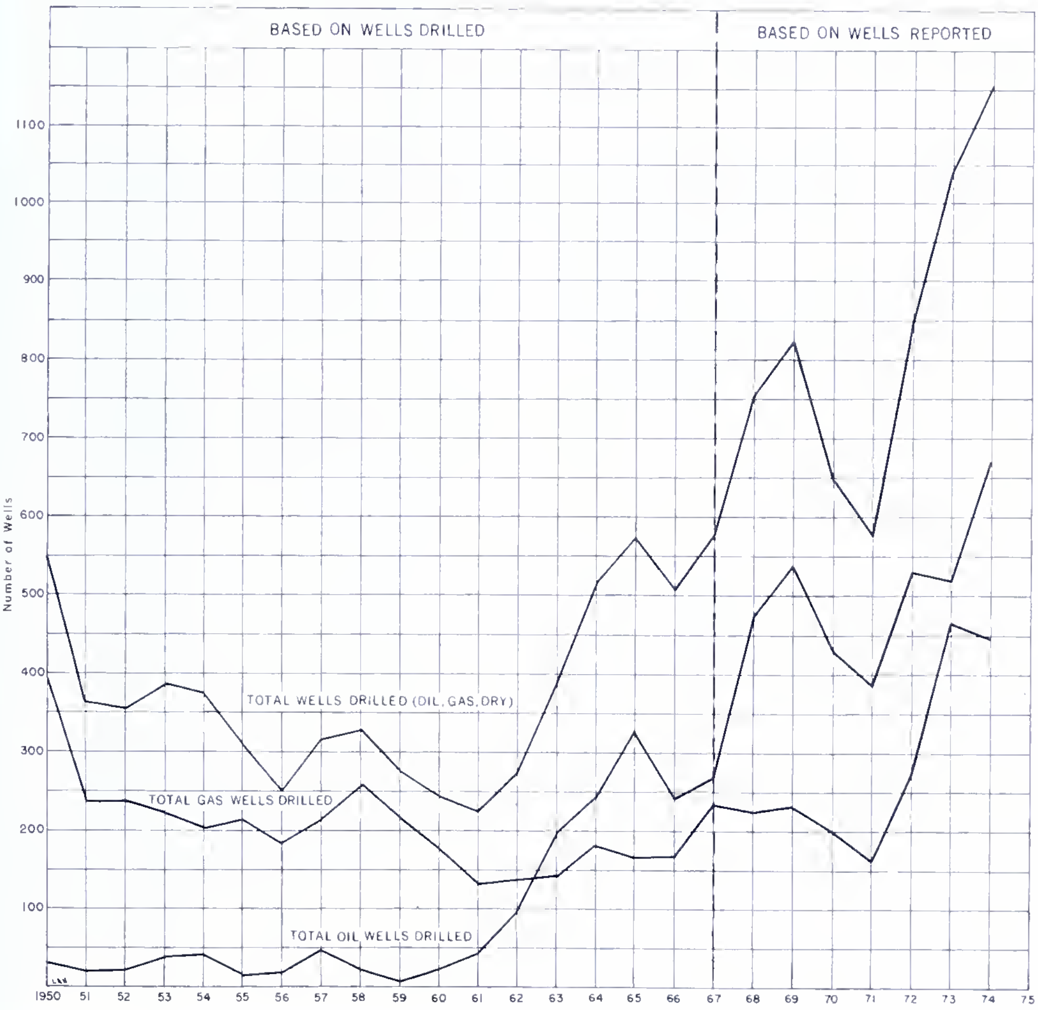

Figure 2. Shallow well activity, 1950-1974.

Table 6. Footage Reported, 1974 and 1973*

1974 No. of Wells	Class	Footage 1974	Footage 1973	% Change	Average Ft. Per Well 1974	Average Ft. Per Well 1973
101	Exploratory	405,423	431,206	− 6	4,014	4,356
1,108	Development	2,224,836	2,133,604	+ 4	2,008	2,134
114	Service & Strat.	191,838	69,189	+177	1,683	1,609
1,323	*SUB TOTAL*	2,822,097	2,633,999	+ 7	2,133	2,306
12	Gas Storage	33,263	55,455	− 40	2,772	3,961
1,335	*TOTAL*	2,855,360	2,689,454	+ 6	2,139	2,327

* Above figures include old wells drilled deeper

Table 7. Reported Discoveries in Pennsylvania, 1974

Map No.	County	Operator Well No. & Lease	Compl. Date M-Day-Y	Total Depth (Ft.)	Name of Formation at T. D.	Prod. Depth (Ft.)	Prod. Formation or Zone	Initial Daily Prod.	Field or Pool Name	Explor. Class	Remarks
79	Butler	Peoples Nat. Gas Co. 1 Emmet C. Rice	2/19/74	7,603	Queenston	1,395	Hundred Foot	169 Mcf	Rice Pool	NPD	New pool discovery in Whitestown field. I. P. 4,000 Mcf, killed to drill to T. D. then reworked.
33	Clearfield	Kewanee Oil Co. 5 Mary M. Grampian	5/13/74	3,100	Canadaway Group	2,946	Canadaway Group	200 Mcf	Bloom Pool	NPD	New pool discovery in Grampian field.
75	Crawford	Meadville Forging Co. 1 Meadville Forging	7/ 8/74	4,392	Queenston	4,305	Medina	280 Mcf	West Mead Pool	NPD	New pool discovery in Conneaut field.
24	Elk	R. L. Burns Corp. 673 Krellner	12/31/73	2,500	Canadaway Group	1,784	Canadaway Group	500 Mcf	Powers Run Pool	NPD	New pool discovery in the Ridgway field.

68	Erie	Electric Materials 1 Electric Materials	2/18/74	2,796	Queenston	2,688	Medina	350 Mcf	Orchard Beach Pool	DPD	Deeper pool discovery in the North East field.
12	Forest	Energy Minerals, Inc. 1-18 Kunselman & Bankhead	6/26/74	2,110	Cooper	2,078	Cooper	5 Bbl.	Sheffield Junction	NPD	New pool discovery in the Cooper field.
38	Indiana	J & J Enterpr., Inc. 1 Edward Brink	1/22/74	3,525	Canadaway Group	3,476	Canadaway Group	100 Mcf	Raytown Pool	NPD	New pool discovery in the Big Run field.
35	Jefferson	J & J Enterpr., Inc. 1 Wilbert Kline	1/ 9/74	3,772	Canadaway Group	3,540	Canadaway Group	119 Mcf	Trout Run Pool	NPD	New pool discovery in the Big Run field.
16	McKean	Portfield Petro., Ltd. 1 Pa. Gas (Lot 179)	7/ 2/74	1,906	Canadaway Group	1,391	Tiona	813 Mcf	Hamilton Pool	NPD	New pool discovery in Tipperary field.
17		John Reetz-Assoc. 2 Lot 386	5/ 8/74	2,047	Canadaway Group	1,883	Canadaway Group	150 Mcf	Rock Run Pool	NPD	New pool discovery in Kane field.
99		Amoco Production Co. 1 Amoco-Witco	2/18/74	7,015	Queenston	5,270	Onondaga	3,000 Mcf	Cyclone Pool	DPD	Deeper pool discovery in Bradford field in Onondaga reef.
21		Ardmore Resources 2-TC UNG-Tr. 2699	1/23/74	2,819	Canadaway Group	1,486	Canadaway Group	30 Bbl.	Clermont Field	NFD	New oil field discovery in area of gas production.
85	Somerset	Amoco Production 1 Dean M. Hottle	2/ 1/74	8,887	Helderberg	2,492	Canadaway Group	570 Mcf	Enoch Pool	SPD	Shallower pool discovery in the Boswell field.
78	Venango	Pennzoil Co. 348 Grant Fee	11/12/73	6,085	Queenston	5,978	Medina	220 Mcf	Galloway Pool	DPD	Deeper pool discovery in the Franklin-Oak Forest field.
13	Warren	S. M. Cundari, Inc. 1 Lot 509 Allegheny Nat. For.	5/23/74	1,409	Canadaway Group	1,298	Clarendon	35 Mcf	Elkhorn Run Field	NFD	New field discovery by a drilled deeper well.

Table 8. Selected Exploratory Failures Reported in Pennsylvania, 1974

Map No.	County	Operator Well No. & Lease	Compl. Date M-Day-Y	Total Depth (Ft.)	Name of Formation at T. D.	Explor. Class or Field	Remarks
80	Armstrong	Peoples Natural Gas Co. 1 J. Heasley	12/23/73	7,478	Helderberg	EXT	Defined northern extension of Roaring Run Oriskany pool.
1	Butler	Peoples Natural Gas Co. 2 Donald B. Flinner	9/26/74	1,849	Pink Rock	EXT	Defined western limit of Rice pool.
2		Peoples Natural Gas Co. 1 Harvey W. Rice	9/21/74	1,862	Pink Rock	EXT	Defined northeastern limit of Rice pool.
45	Cambria	Peoples Natural Gas Co. 1 D. A. Farabaugh	11/19/74	3,622	Canadaway	NPW	Wildcat in Belsano field east of the major gas trend.
25	Cameron	Consolidated Gas Sup. Corp. 2 A. Pardee Estate	1/ 6/74	3,313	Canadaway	SPW	Tested the Upper Devonian rocks at the northern end of the Whippoorwill field.
26		Consolidated Gas Sup. Corp. WN-1322 A. Pardee Estate	1/16/74	3,400	Canadaway	SPW	Tested the Upper Devonian rocks along the eastern side of the Whippoorwill field.
89	Centre	Phillips Petroleum Co. 1 Robert & Sally Blair	12/ 3/73	7,138	Helderberg	NFW	Oriskany test 4 miles northwest of Allegheny Front where Oriskany outcrops.
32	Clearfield	Consolidated Gas Sup. Corp. 1 William I. Betts, Jr.	10/ 1/74	3,799	Candaway	SPW	An effort to extend shallow gas production farther toward the east.
31		Consolidated Gas Sup. Corp. WN-1272 Cyrus Gordon, et al.	12/28/73	3,700	Candaway	NFW	An effort to extend shallow gas production east of the Punxsutawney-Driftwood field.
73	Crawford	Consolidated Gas Sup. Corp. 1 Howard M. Gage	12/31/73	7,186	Warrior	NFW	Upper Cambrian test in northwestern Pennsylvania.
74		B. A. Floto & Assoc., Inc. 1 Frank McDuff	2/15/74	4,253	Queenston	NFW	Lower Silurian test in northwestern Pennsylvania.
27	Elk	United Natural Gas Co. 5997 Hall and Kaul	1/11/73	2,804	Canadaway	NFW	Tested Upper Devonian section in area of sparse shallow production.
28		Consolidated Gas Sup. Corp. WN-1304 A. J. Palumbo	10/ 8/73	3,432	Canadaway	EXT	Defined southern limit of Gardner Hill pool.
97		Amoco Production Co. 1 Sylvania Wt. 2357	9/28/73	6,684	Salina Salt	EXT	Defined northeastern limit of Benzinger field.

70	Erie	Henry B. Kelsey 1 Leopold	9/ 8/74	4,996	Trenton	NFW	Middle Ordovician test in northwestern Pennsylvania.
69		North East Nat. Gas Co., Inc. 1 E. & S. Stasiewski	1/ 8/74	3,102	Queenston	NFW	Medina test in northeastern Pennsylvania.
81	Fayette	Amoco Production Co. 1 Alice M. Shaffer	4/ 2/74	8,963	Oriskany	NFW	Lower Devonian test on Chestnut Ridge anticline.
82		Peoples Natural Gas Co. 2 C. B. Smith Estate	8/10/73	11,335	Queenston	DPW	Tuscarora test in East Summit Oriskany pool.
101	Forest	Amoco Production Co. 1 E. S. Collins-Clinger Tr.	4/16/74	6,192	Queenston	DPW	Medina test in Balltown-Truemans field.
86	Indiana	T. W. Phillips Gas & Oil Co. 1 Charles H. Miller, et ux.	10/ 4/74	7,240	Onondaga	EXT	Defined limit of Elk Run field on the southern end.
3	Lawrence	Volees Oil Co. 1 T. R. Powell	8/16/74	945	First Venango	NFW	Rank wildcat in western Pennsylvania.
98	McKean	Amoco Production Co. 1 Mars Co., Wt. 2666	7/31/74	6,160	Salina	DPW	Upper Silurian test on the Clermont syncline in the Oriskany no sand area.
100		Amoco Production Co. Penn Gas Well No. 1	7/ 3/74	6,832	Queenston	DPW	Medina test in northern Pennsylvania.
95	Potter	Fairman Drilling Co. 1 Commonwlth Pa. Tract 204	2/14/74	7,806	Salina	NFW	Lower Devonian test along pinchout of Oriskany on southeastern flank of Harrison anticline.
90		Flint Oil and Gas, Inc. 1 Dept. F & W Tract 176	7/26/74	7,210	Salina	NPW	Oriskany test in the Leidy field.
94		Earl H. Linn, et al. 1 North Penn Gas	2/28/74	7,300	Helderberg	NFW	Oriskany test along pinchout at southern end of Conrad anticline.
93		Earl H. Linn 1 Pa. State Tract 181	10/28/73	6,923	Keyser	NFW	Oriskany absent on northern end of Conrad anticline where pinchout of Oriskany occurs.
84	Somerset	Amoco Production Co. 1 Ada I. Bittner	7/20/74	5,860	Keyser	NFW	Upper Silurian test on Deer Park anticline.
91	Tioga	Consolidated Gas Sup. Corp. Commonwlth Pa. Tract 192	12/ 5/73	6,287	Helderberg	NPW	Test for a new pool in the Leidy field on Chestnut Ridge anticline.
92		Amoco Production Co. 1 H. P. Dewey, Wt. 2303	2/12/74	15,097	Rose Run	NFW	Upper Cambrian test on southeast flank of Marshlands anticline.

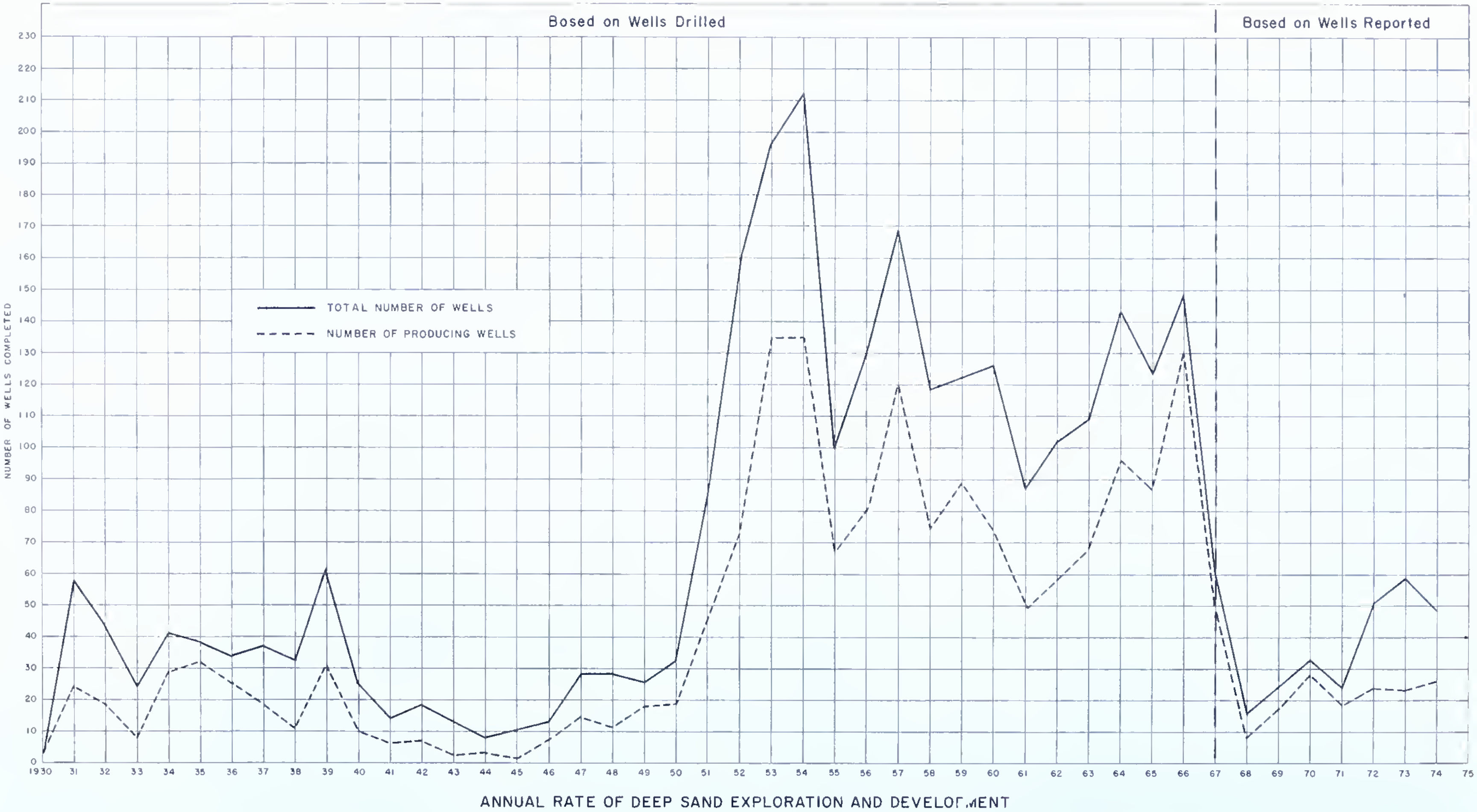

Figure 3. Annual rate of deep sand exploration and development, 1930-1974.

Production and Reserves

As shown in Table 9, oil and gas production increased during 1974 over that of 1973. Also the reserves of oil and gas increased during 1974.

The 3,341,000 barrels of Pennsylvania Grade crude had a value of about $35,049,980 if it is all classified as new or stripper oil. Possibly some of it is classified as old oil but these figures were not available. The national amount of old oil produced during 1974 was about ⅓ of the total. The 58,000 barrels of Corning Grade crude oil was produced from the Medina sandstone (Lower Silurian) mostly in Crawford County. This oil had a value of $580,000. Development drilling for crude oil was up 28 percent for 1974 from 1973. If this increase in development drilling continues during 1975, the production of crude oil in the Commonwealth should top 3.5 million barrels in 1975.

Some statistics in Pennsylvania are compiled by districts as defined by the refiners according to the price paid for crude in certain areas. The limits of the Bradford District has been increased from what they had been over the past and at the same time this decreased the limits of the Middle District. Therefore, it is now difficult to obtain statistics on the former areas. Only average daily oil production figures were available for the bottom curve of Figure 6.

Figure 5 shows the annual production of crude oil in Pennsylvania from 1859 to 1974 and in the Bradford field from 1871 to 1974. The monthly variation in crude oil price, production and well completions is plotted in Figure 6 for the years 1930 to 1974 for the Bradford District (old).

At the end of 1974, there were approximately 17,123 producing gas wells in the Commonwealth. The 82,735,000 Mcf of shallow and deep gas shown in Table 9 had a value of about $33,094,000. Since the price paid for gas during 1974 varied widely over the Commonwealth and production figures are not available to go with each price figure, it is impossible to determine the true value of the natural gas produced. The deep gas production amounted to 13,007 MMcf and the shallow gas produced was 69,728 MMcf. Figure 7 shows the following for the years 1946 to the present: 1) the yearly production of natural gas, 2) the yearly consumption of natural gas, 3) the natural gas reserves, and 4) the amount of natural gas in storage. The consumption of natural gas in the state declined for the first time in 1973 since at least 1946 when the data for Figure 7 was first plotted. The deep gas production by field and pool is shown in Table 12.

Gas Storage Fields

There were 12 wells drilled for gas storage during the year. Of these 12 wells, 2 were deep wells, and 10 were shallow wells. A number of

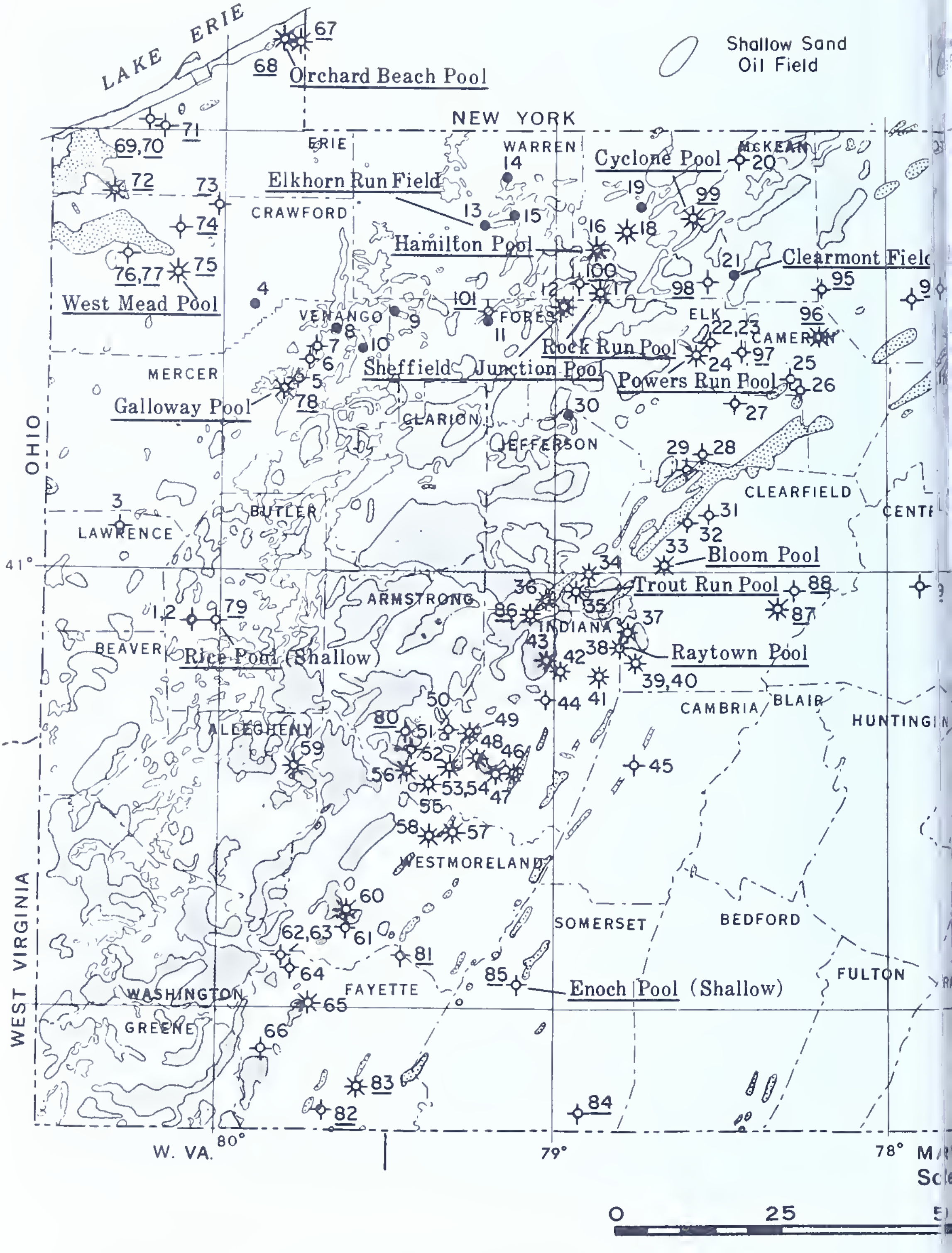

Figure 4. Oil and gas map of
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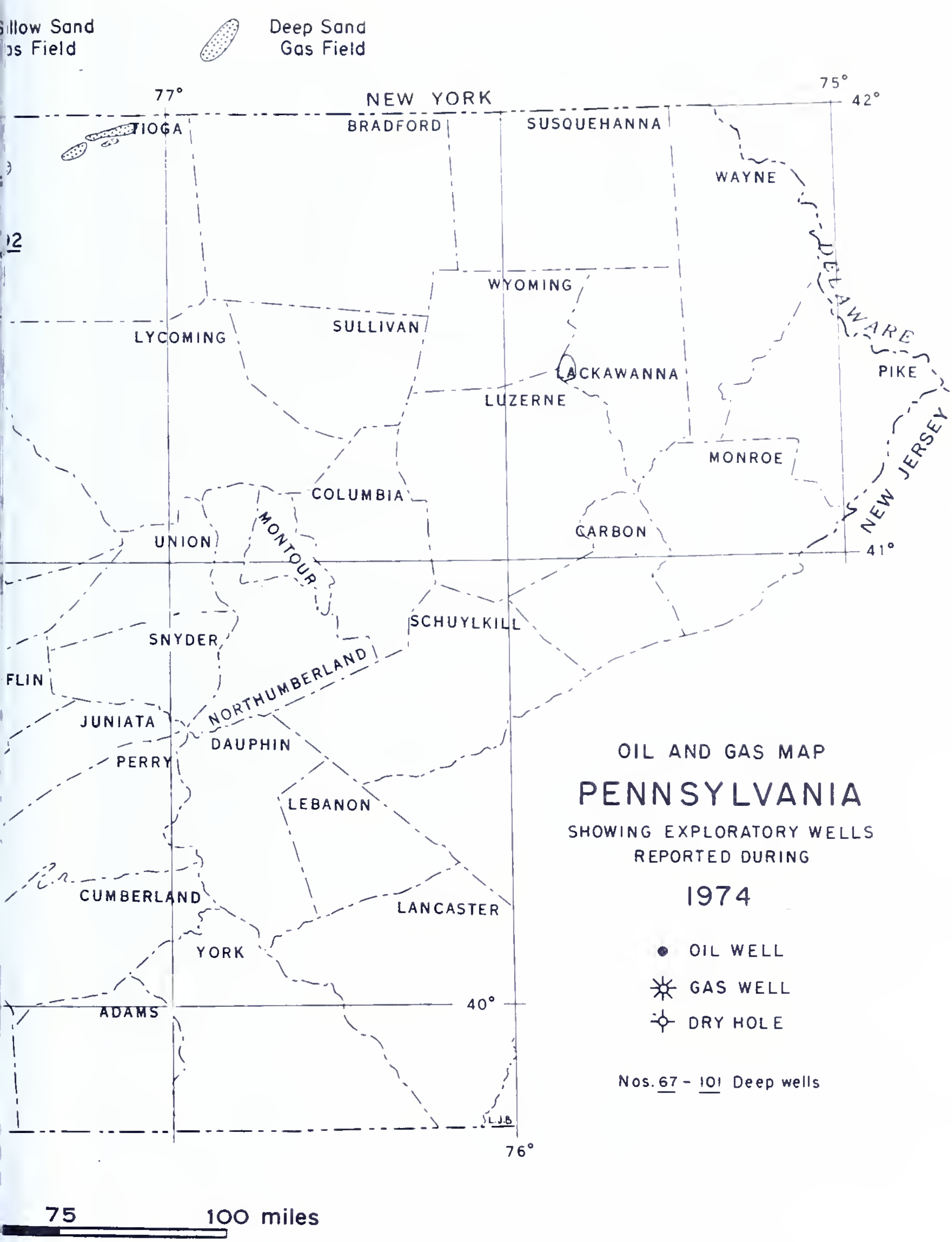

ınia showing exploratory wells
74.

Table 9. *Production and Reserves in Pennsylvania, 1974*

		Production				*Reserves*		
		1974	*1973*	*% Change*	*Cumulative to 12/31/74*	*1974*	*1973*	*% Change*
Oil (1,000 bbls.)	Penna. Grade	3,341	3,206	+ 4	1,282,925	49,696	38,837	+28
	Corning Grade	58	76	-24	484	718	776	- 7
	TOTAL OIL	3,399	3,282	+ 4	1,283,409	50,414	39,613	+27
	Natural Gas Liquids (1,000 bbls.)	79	76	+ 4	—	580	659	-12
Gas (MMcf)	Shallow	69,728	66,713	+ 5	—	—	—	—
	Deep	13,007	11,801	+10	—	—	—	—
	TOTAL GAS	82,735	78,514	+ 5	8,838,814	1,492,145*	1,494,381*	- 0.2
	Stored Gas					585,789	647,041	- 9

* Stored Gas Included

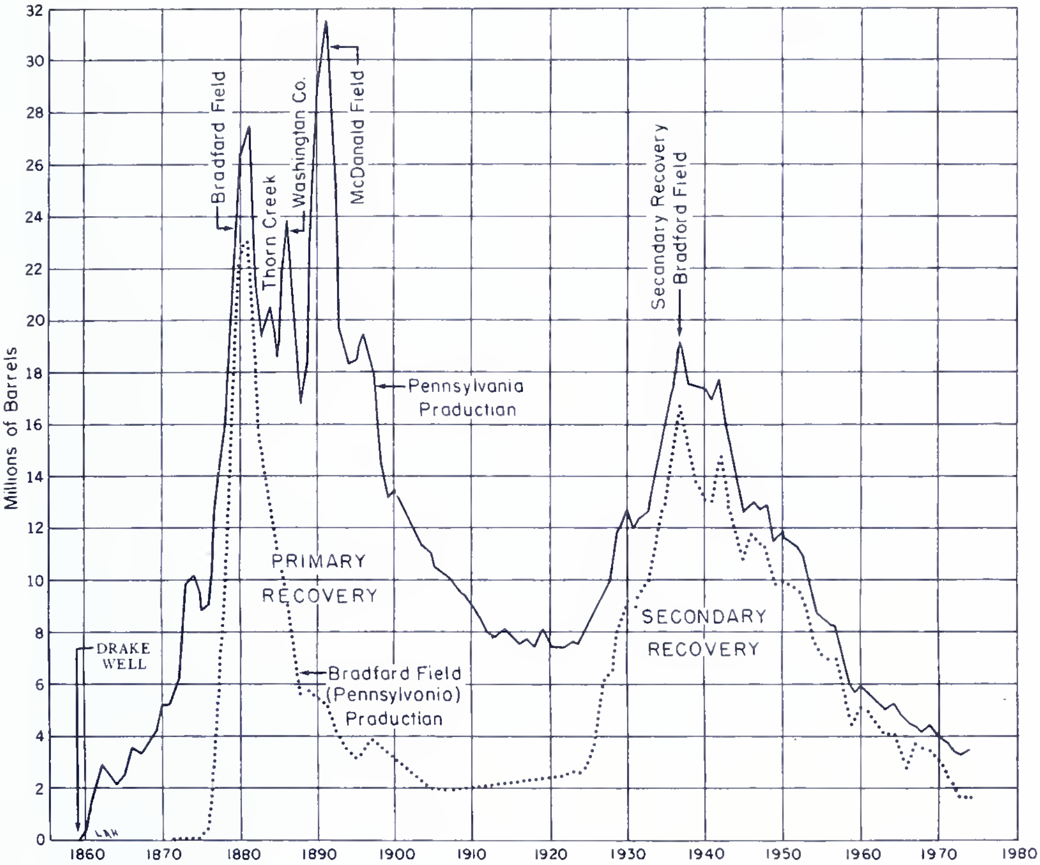

Figure 5. Annual production of crude oil in Pennsylvania.

storage wells were worked over during the year. Storage well drilling activity was down 14 percent from that of 1973. Figure 8 of Progress Report 186 shows the distribution and lists the names of the current gas storage fields in Pennsylvania. A map of the gas storage fields at a scale of 1:500,000 is available at the Survey's Pittsburgh office at cost of reproduction.

The storage capacity decreased during the year to 728,110 MMcf compared to 783,450 MMcf in 1973. The total gas in storage on December 31, 1974 was 585,789 MMcf or 9 percent less than the amount in storage on December 31, 1973. The gas in storage consisted of 28,635 MMcf of native gas and 557,154 MMcf of stored gas.

Secondary and Tertiary Recovery Projects

There were 114 water or gas injection wells completed during the year, up 165 percent from those completed in 1973. In McKean County 141 oil wells were completed, most of them in secondary recovery projects. The

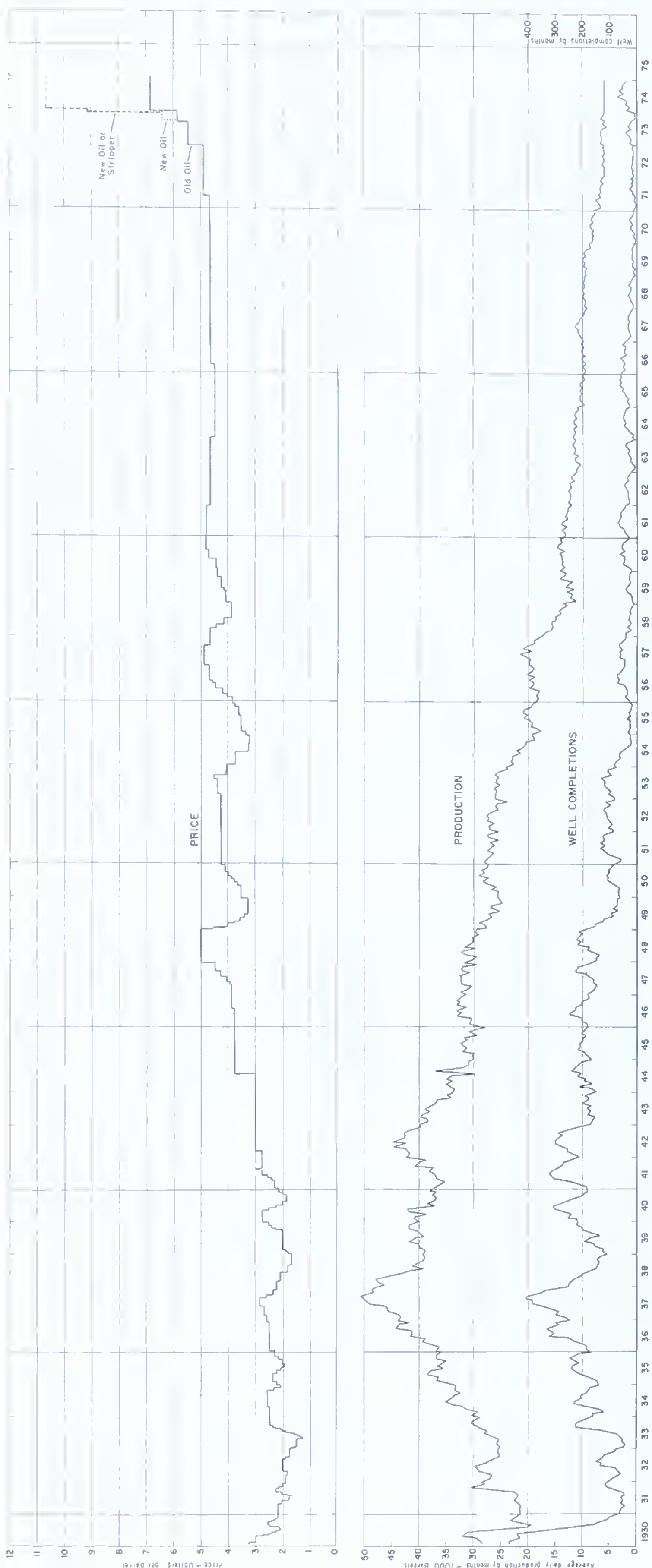

Figure 6. Crude oil prices, production and completions, Bradford District.

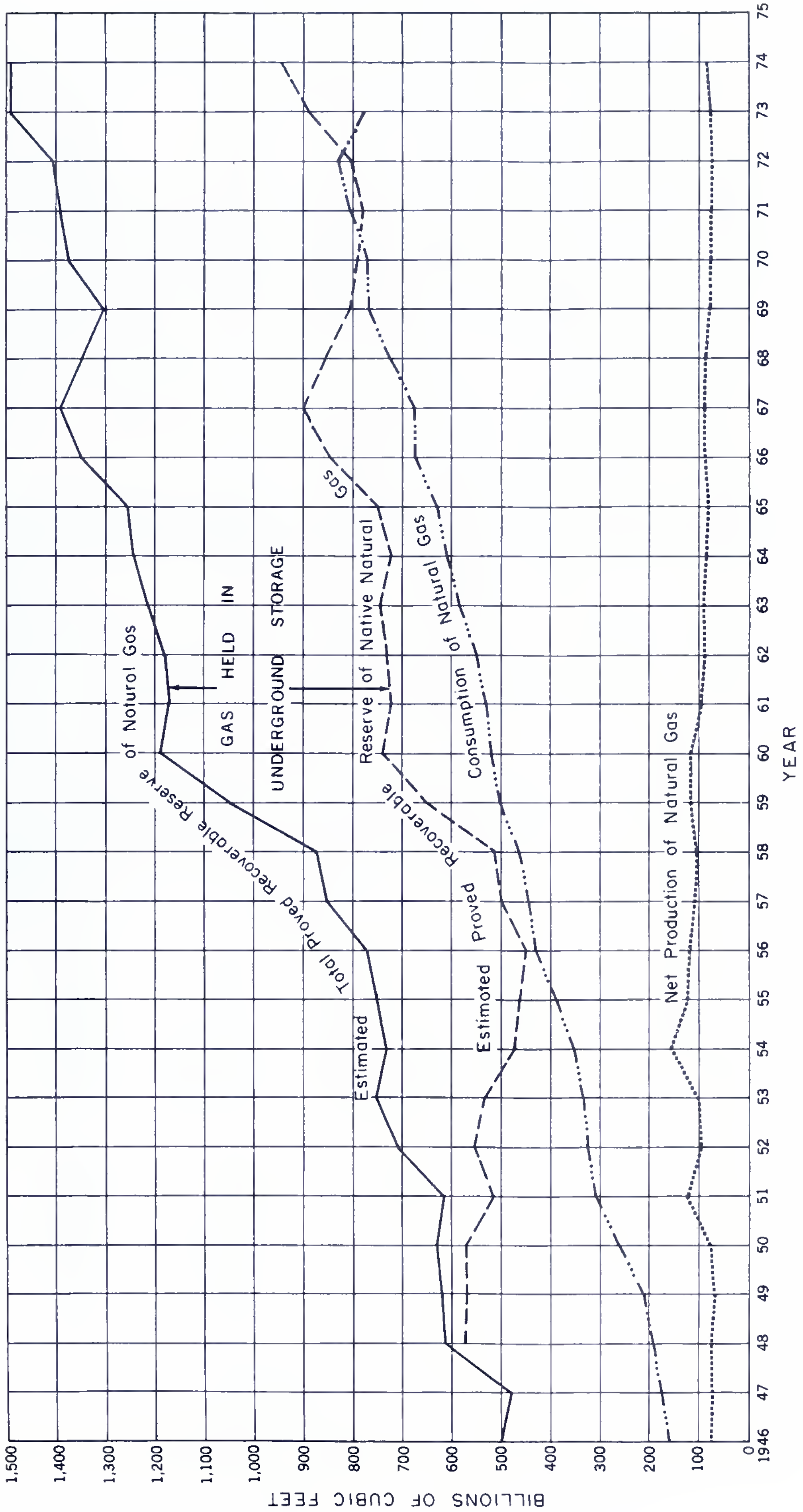

Figure 7. Production, consumption and reserves of natural gas in Pennsylvania.

Table 10. *Average Daily Oil Production*

District	*1974*	*1973*	*% Change*
*Bradford District	5,459	5,146	+ 6
*Middle and Southwestern District	3,700	3,638	+ 2
Medina Corning	159	208	–24
Total	9,318	8,992	+ 4

* In 1973 the limits of the Bradford District were increased to conform to the price being paid for the crude oil in the area, while the Middle District limits were decreased. Therefore, the figures are on a different base than previous ones.

waterfloods in McKean County produced about 50 percent of Pennsylvania's yearly crude oil production.

Two Marafloods continue to operate in Pennsylvania. The Warren County project in the First Venango sand is still in the experimental stage. The McKean County project in the Bradford Third sand continues into its sixth year. The increase in the price of crude oil has made this an economical operation. Operators are cautious about starting new Marafloods due to the uncertainty of the price of crude oil.

Table 11. *Oil Wells and Crude Oil in Pennsylvania by Counties, 1973 and 1974**

	Crude oil production (bbls.)		*Number of producing oil wells*	
County	*1974*	*1973*	*12/31/74*	*12/31/73*
Allegheny	61,898	64,320	340	346
Armstrong	11,859	9,769	120	110
Beaver	4,572	4,525	105	105
Butler	78,817	78,074	1,356	1,366
Clarion	24,078	22,955	541	548
Crawford	60,198	82,052	450	406
Elk	36,565	18,150	213	154
Erie	257	175	5	none rept'd.
Fayette	159	187	2	2
Forest	125,909	101,135	761	679
Greene	31,589	32,956	287	301
Jefferson	2,392	1,714	109	109
McKean	1,680,120	1,797,466	13,226	13,203
Mercer	1,104	3,497	87	92
Potter	12,650	11,494	190	189
Venango	518,477	487,054	9,624	9,295
Warren	509,817	396,889	4,078	4,051
Washington	105,042	109,920	583	583
Total	3,265,512	3,222,332	32,095	31,539

* Compiled by the Department of Commerce, Bureau of Statistics

Table 12. *Deep-Gas Production in Pennsylvania, 1974*

County	*Field*	*Pool*	*Discovery Date*	*Cumulative Production at End of 1973 (In Mcf)*	*Production 1974 (In Mcf)*	*Cumulative Production at End of 1974 (In Mcf)*	*Status of Field or Pool at End of 1974*
Armstrong	Goheenville*	Snyderville	10/23/70	78,803	16,189	94,992	Producing
	Roaring Run*	Roaring Run Oriskany	12/14/70	1,272,921	949,199	2,222,120	Producing
Bedford	Purcell		12/14/57	3,125,646	162	3,125,808	Producing
Cambria	Patton	Burley	1/15/69	9,556	84,560	94,116	Producing
		Pindleton	6/30/69	2,693,260	624,217	3,317,477	Producing
Cameron	Canoe Run		8/24/73				Shut-in
	East Emporium		11/18/71		1,321,000	1,321,000	Producing
Cameron and Elk	Whippoorwill		7/10/61	14,965,000	181,000	15,146,000	Producing
Cameron, Elk, Jefferson, Clearfield and Indiana	Punxsutawney-Driftwood*	*TOTAL*	9/15/51	478,574,000**	2,644,000	481,218,000	Producing
		Benezette	1/ 5/53	245,573,000	935,000	246,508,000	Producing
		Driftwood	9/15/51				
		Boone Mt.	9/18/58	102,442,000**	761,000	103,203,000	Producing
		DuBois	1/ 6/60				
		Sabula	8/26/63	867,000	16,000	883,000	Producing
		Helvetia	5/11/60	125,562,000	885,000	126,447,000	Producing
		Reed-Deemer	5/ 9/55				
			12/ 1/53				
		Rockton	2/25/55				
		Sykesville	11/10/60				
		Hicks Run	6/ 7/56	4,130,000	47,000	4,177,000	Producing
Clearfield	West Decatur		3/30/73		244,882	244,882	Producing
Clinton and Potter	Leidy	*TOTAL*	1/ 9/50	160,155,652	33,409	160,189,061	Gas storage and producing
		Ole Bull	1/ 9/59	5,355,620	33,409	5,389,029	Producing
Crawford and Erie	Conneaut	*TOTAL*	2/11/57	32,107,250	1,503,143	33,610,393	Producing and abandoned
		Bushnell-Lexington	12/31/58	14,334,424	502,179	14,836,603	Producing and abandoned
		Indian Spring	9/11/57	12,080,178	725,835	12,806,013	Producing
		Kastle	7/14/62	2,868,041	140,533	3,008,574	Producing
		Lundys Lane	11/ 9/61	1,692,829	105,009	1,797,838	Producing
		Pierce	12/31/58	756,047	29,587	785,634	Producing
		West Mead	7/ 8/74				Shut-in

Table 12. (Continued)

County	Field	Pool	Discovery Date	Cumulative Production at End of 1973 (In Mcf)	Production 1974 (In Mcf)	Cumulative Production at End of 1974 (In Mcf)	Status of Field or Pool at End of 1974
Elk	Benzinger		11/ 7/72				Shut-in
	Horton	Boot Jack	9/20/73		3,349	3,349	Shut-in
Erie	Bull Reservoir		9/17/72				Shut-in
	Burgess		10/17/60	150,441	4,172	154,613	Producing
	Corry	*TOTAL*	4/29/47	1,053,830	3,434	1,057,264	Gas storage and producing
		Beaver Dam	5/20/53	200,130	3,434	203,564	Producing
	McKean		1/19/73	63,274	51,884	115,158	Producing
	Meade		8/23/46	4,924,070	1,468	4,925,538	Oriskany gas storage [1 producing Medina well]
	Northeast	Orchard Beach	2/ 8/74				Shut-in
Fayette	Ohiopyle		12/28/59	3,998,299	105,421	4,103,720	Producing
	Sandy Creek*		8/ 8/63	576,206	19,256	595,462	Producing
		Fike	8/ 8/63	412,062	9,155	421,217	Producing
		Quebec Run	6/31/69	164,144	10,101	174,245	Producing
	Spruell		10/31/61	3,227,619	669,446	3,897,065	Producing
	Summit	*TOTAL*	3/24/38	42,757,266	234,753	42,992,019	Producing and abandoned
		North Summit	3/24/38	21,123,083	63,837	21,186,920	Producing
		South Summit	5/ 9/42	21,607,033	170,916	21,777,949	Producing
Indiana	Cherry Hill*	Crichton	1/ 9/63	2,813,528	43,169	2,856,697	Producing
		Hadden	7/11/63				
	Jacksonville		9/21/56	28,414,054	286,000	28,700,054	Producing
	Nolo		9/30/56	13,357,174**	54,857	13,412,031	Producing
	Strongstown	Pineton	12/20/69		754,000	754,000	Producing
Jefferson	Big Run*	Elk Run	6/30/65	45,288,000	714,000	46,002,000	Producing
McKean	Bradford	Cyclone	2/18/74		45,074	45,074	Producing
	Corydon		9/ 8/72				Shut-in
Mercer	Henderson	Kilgore	10/26/66				Production not available
	Wheatland		7/24/63	171,126	15,491	186,617	Producing
Potter	Ulysses		10/ 2/39	3,783,118	103,714	3,886,832	Producing
		New Field	4/ 2/62				

Somerset	Boswell	*TOTAL*	11/11/58	10,979,744**	280,856	11,260,600	Producing
		Boswell	11/11/58	10,044,610**	257,996	10,302,606	Producing
		Snyder	6/16/60	935,134	22,860	957,994	Producing
Venango	Barkeyville	Duncan	4/ 5/73	14,860	39,226	54,086	Producing
	Franklin Oak Forest	Galloway	11/12/73		12,000	12,000	Producing
	Wesley	Irwin	12/ 1/72		61,570	61,570	Producing
Warren	Sugar Grove	Pettigrew	5/29/70				Production not available
Washington	Daniels Run*	Glyde	9/ 6/61	102,826	6,213	109,039	Producing
Westmoreland	Blairsville*	Kahl	10/23/62	9,254,542	245,447	9,499,989	Producing
	Latrobe*	Dry Ridge	8/25/46	5,167,856	117,439	5,285,295	Producing
	Jacobs Creek*	Bailey	12/26/61	1,525,247	152,417	1,677,664	Producing
	Lycippus	*TOTAL*	8/17/49	6,215,177	75,431	6,290,608	Producing and abandoned
		St. Boniface Chapel	9/13/56	5,475,749	75,431	5,551,180	Producing
	Murrysville*	*TOTAL*	11/ 3/1878	571,955	39,245	611,200	Producing and abandoned
		Duquesne	8/ 8/65	443,028	39,245	482,273	Producing
Westmoreland and Somerset	Johnstown	*TOTAL*	5/16/57	25,120,818	1,177,186	26,298,004	Producing and abandoned
		Baldwin	5/22/60	8,802,021	533,836	9,335,857	Producing and abandoned
		Beck	5/16/57				
		Williams	2/14/58	16,318,797	643,350	16,962,147	Producing
	Seven Springs	*TOTAL*	12/15/58	7,115,389	145,886	7,261,275	Producing and abandoned
		Blair	12/ 5/58	5,818,747	115,784	5,934,531	Producing
		Tunnel	3/10/65				
		Seven Springs	8/ 3/66	584,219	30,102	614,321	Producing

* "Shallow" gas production of field not shown

** Correction

Oil and Gas Prices

Crude oil prices for the year are shown in Table 13. Gas prices have varied considerably in the Commonwealth during the year. By the year's end most purchasers of gas were paying at least 50 cents per Mcf for new gas with some paying up to $1.00 per Mcf. Some contracts effective the first of 1975 are to pay $1.143 per Mcf. The lowest being paid for old gas is 30 cents per Mcf. A number of the contracts have transportation allowances.

Table 13. Crude Oil Prices per Barrel, Pennsylvania, 1974

	Pennsylvania Grade Crude	
	Old Oil 1/1/74 to 12/31/74	New or Stripper Oil 1/1/74 to 12/31/74
Bradford District	$6.83	$10.65
Middle District	6.55	10.28
Southwestern District	6.12	10.13
	Corning Grade Crude	
Crawford & Erie Counties	5.17	10.00

Land Sales

At the end of 1974, the Pennsylvania Game Commission had 43 active leases totaling 45,859 acres, and 46 wells producing on 17 of the preceding leases. A total of 12,957 acres of Commission land was leased during the year.

In 1974, six tracts of State Forest or Park lands were leased for the exploration and development of oil and gas. From the leasing of these lands, which are located in Elk, Cambria, Lycoming and Somerset Counties, the Department received a first year's rental bonus of $202,404.15 for the 11,713 acres put under lease. The average bonus per acre received from the competitively bid tracts was $17.28.

Also, during the year, six tracts were obtained by the acquisition of lands for State Forest use which already had oil and gas leases issued upon them. The lands containing the oil and gas leases totaled 2,209 acres and all carried the standard rental of $1.00 per acre per year. These lands are located in Lycoming and Westmoreland Counties. Also negotiated was a tract of land containing 8,803 acres in Fayette County in which the Commonwealth received a ten percent interest to the oil and gas rights and fifty percent interest in the gas storage rights.

Rental and royalty payments received during 1974 which were related to the oil and gas development and storage programs resulted in a total income of $941,236.71. Of this total, royalty payment for the year amounted to $352,936.81 for 2,935,785 Mcf. These totals are above normal because part of the remaining reserves which totaled 2,145,436 Mcf in the Driftwood-Benezette gas storage field were received during the year. Payment received for these reserves was $247,189.13. Rentals for new wildcat acreage and past leasing programs totaled $345,127.87 while storage rentals was $230,293.78. Other income for pipelines, compressor stations rentals and seismic surveys totaled $12,878.25.

Of significant importance during the year was the placing under lease of 37,223 acres of the Driftwood-Benezette gas storage field in the Elk and Moshannon State Forests in Elk, Cameron and Clearfield Counties.

At the end of the year, 282,440 acres of State Forest and Park lands were under lease for oil and gas exploration and development. This figure includes 98,611 acres in gas storage.

Geophysical Activity

The Department issued six seismic permits to industry to conduct subsurface studies to evaluate our lands for possible oil and gas exploration. These permits were located in Cameron, Potter, Somerset and Tioga Counties.

Seismic activity was down from 161 crew-weeks during 1973 to 123 crew-weeks in 1974 with most of the activity being Vibroseis. The total cost of this seismic work was about $2,480,000. The seismic surveys were made in Adams, Bedford, Berks, Blair, Bradford, Butler, Cambria, Cameron, Centre, Clearfield, Clinton, Cumberland, Elk, Franklin, Lawrence, Lebanon, Luzerne, Lycoming, McKean, Potter, Somerset, Sullivan, Susquehanna, Tioga, Venango, Washington, Wayne, and Wyoming Counties, 28 of the 67 counties in the Commonwealth.

1974 Highlights

Discoveries were down to 15 in 1974 from the 23 in 1973. Of the 15 discoveries 13 were gas and 2 oil. The most significant discovery was the #1 Amoco-Witco by Amoco Production Company in the Bradford field, McKean County discovering the Cyclone Pool. Gas production was obtained from an Onondaga Reef (Middle Devonian) from 5,184 feet to 5,270 feet. The initial production was 3,000 Mcf per day at a rock pressure of 2,841 psi in 79 hrs. This discovery is the first reef production in the Commonwealth extending the production from reefs in New York State to the southwest along trend. Other reefs should be present along this trend in Pennsylvania.

Several wells have been drilled to the Medina (Lower Silurian) in northwestern Pennsylvania. Some have found gas and others have yet to be completed. This corner of the Commonwealth is a large area of potential gas production from the Medina. In the Indian Spring field 7 gas wells, 4 oil and gas wells, and 2 dry holes were completed in the Medina.

Three interesting deep tests were drilling in 1974. Two of them were completed while the third well the No. 1 Leonard Svetz by Amoco Production Company in Somerset County was completed in the early part of 1975 to a total depth of 21,460 feet in the Upper Cambrian and has been plugged and abandoned. This is now the deepest well drilled in the Appalachian Basin. It will be reported in detail in the 1975 development report. The No. 1 Gage in Crawford County was drilled to a total depth of 7,186 feet in the Warrior (Upper Cambrian). In Tioga County the No. 1 Dewey was completed in the Rose Run (Upper Cambrian) at a total depth of 15,097 feet. Both of these wells were dry and were plugged and abandoned. The current big play is for the Upper Devonian gas in the Canadaway Group in Indiana County. Development on this trend is spreading east as well as northeast and southwest.

INDUSTRY RELATED ACTIVITIES

Subsurface Base Maps

Twenty-three base maps (Figure 8) showing locations of oil and gas wells and the outlines of the oil and gas fields are now available. Each base map encompasses four 15-minute topographic quadrangles and is at the same scale (1 inch equals 1 mile). A five-minute grid, quadrangle names, county boundaries, and major rivers and towns make up the background of the base map. All deep wells known and all shallow wells on record with the Pennsylvania Geological Survey are located, and the status (dry, oil producing, gas producing, etc.) is shown by symbol. Deep wells (Tully Formation or deeper) are differentiated and elevation and total depth are shown. Symbols indicate the availability of geophysical log and sample data on open file in the Survey's Oil and Gas Division office in Pittsburgh. An index map with the legend shows the outlines of oil and gas fields within the mapped area, thus indicating areas of extensive pre-1956 drilling. A listing of the field names is also included.

Paper prints of the base maps can be obtained by writing to the State Book Store, P. O. Box 1365, Harrisburg, Pennsylvania 17125. The cost of each base map is $0.50, plus a 6 percent sales tax to Pennsylvania residents. A check for the appropriate total amount made out to the Commonwealth of Pennsylvania must accompany the order. When ordering please specify the map number.

A cross index of state permit numbers with quadrangle map numbers used on the base maps is available from the Pittsburgh Branch of the Pennsylvania Geological Survey, 1201 Kossman Building, Stanwix Street,

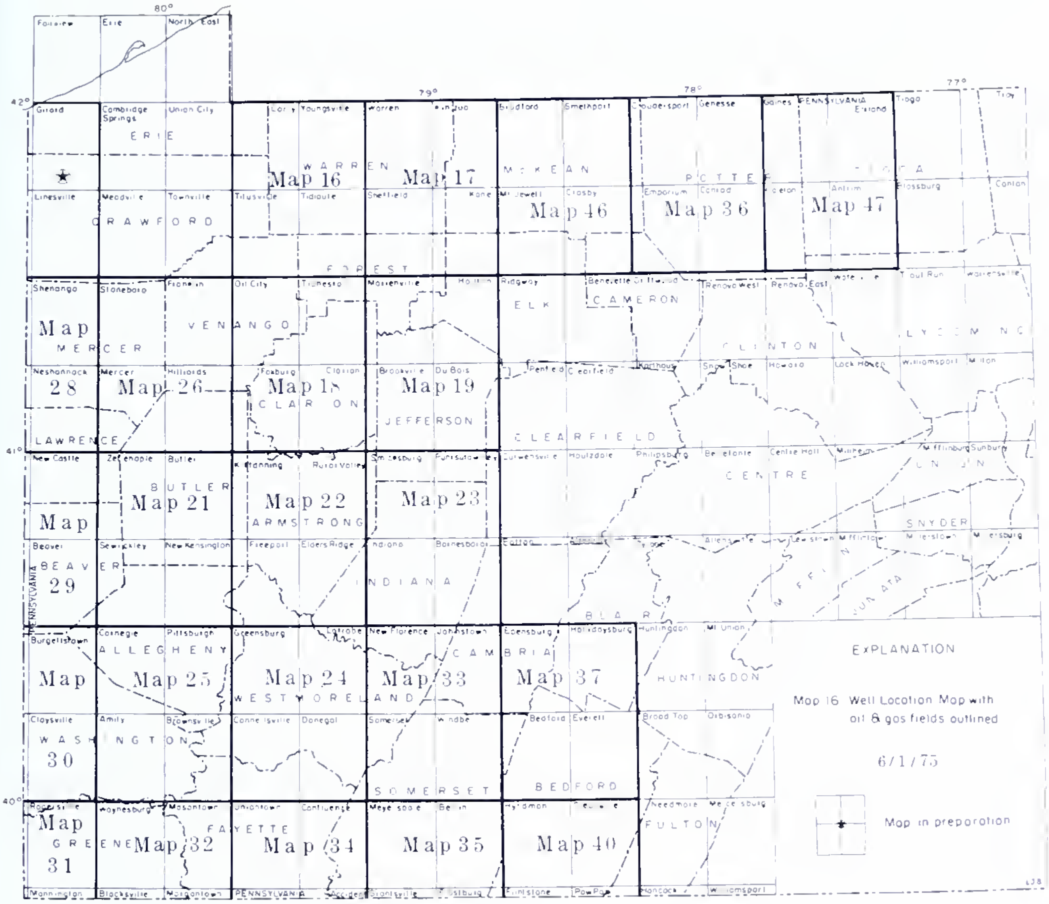

Figure 8. Index of available subsurface base maps.

Pittsburgh, Pennsylvania 15222. This index is arranged by quadrangles. Please specify the quadrangle when requesting this literature. Base maps are updated every six months. Maps now available were updated as of June 1, 1975. A list of the Survey's publications and open file reports can be obtained by sending a request to either the Pittsburgh or Harrisburg office.

PART III. SUMMARIZED RECORDS OF DEEP WELLS REPORTED IN 1974

The information in the following tables has been compiled mainly from drillers' logs and location plats received from the Oil and Gas Division of the Bureau of Land Protection and Reclamation. Other sources are Petroleum Information Corporation (PI), geophysical logs received by the Pennsylvania Geological Survey, and personal communications with oil and gas operators. The identification numbers in Table 14 refer only to well location numbers on Figure 4 of this report. The more significant numbers are the permit numbers by which the wells are filed with the Bureau of Land Protection and Reclamation and the unique quadrangle numbers by which the Survey files the wells and locates them on 15-minute quadrangle maps.

A single asterisk appearing on a log indicates that all formation tops and total depths were picked from a geophysical log. A log without an asterisk means that the formation tops and total depths are from the drillers' log or PI. Where a double asterisk appears, the 7½-minute quadrangle name and location are given. A plus sign appearing on a log indicates that all formation tops and total depths were picked from sample descriptions. These tables are listed alphabetically by county and by name of well. The elevations are ground (GR).

The producing depth record still stands at 11,458 feet in the Tuscarora (Lower Silurian) sandstone, while the drilling depth record was established by the No. 1 Leonard Svetz by Amoco Production Company in Somerset County early in 1975 when the well was completed at a total depth of 21,460 feet in the Upper Cambrian.

Table 14. *Summarized Record of Deep Wells Reported in 1974*

MAP NUMBER		39	79		96		89	88	87		
COUNTY Permit Number		Armstrong 1592-D	Butler 20690	Cambria 20040	Cameron 20055	Cameron 20058	Centre 20005	Clearfield 20537	Clearfield 20538	Clinton 20178	Crawford 20425
NAME OF WELL		J. Heasley #1	Emmet C. Rice #1	George L. Reade #3	Emporium Water Co. #1	Pa. Tract 189 #1	R. & S. Blair #1	General Refractories #B-1	Mabel McClure #1	Pa. F & W Tract 3 #LW-19	Lloyd R. Bean #1
OPERATOR		Peoples Natural Gas Co.	Peoples Natural Gas Co.	Peoples Natural Gas Co.	Consol. Gas Supply Corp.	Amoco Production Co.	Phillips Petroleum Corp.	Texaco, Inc.	Texaco, Inc.	Consol. Gas Supply Corp.	Meridian O & G Enterprises
TOWNSHIP		South Bend	Lancaster	Jackson	Lumber	Shippen	Union	Boggs	Boggs	Leidy	Spring
QUADRANGLE		Elders Ridge D 47	Zelienople F 10	Johnstown D 15	Emporium G 39	Driftwood A 122	Bellefonte B 3	Houtzdale C 9	Houtzdale C 8	Renovo West D 225	Girard I 442 **Conneautville
LATITUDE		14,600 ft. S 40°40'	12,900 ft. S 40°55'	250 ft. S 40°25'	17,450 ft. S 41°35'	6,000 ft. S 41°30'	11,800 ft. S 41°00'	19,500 ft. S 41°00'	29,000 ft. S 41°00'	21,200 ft. S 41°25'	12,950 ft. S 41°50'
LONGITUDE		4,800 ft. W 79°25'	2,450 ft. W 80°00'	7,400 ft. W 78°55'	5,500 ft. W 78°10'	16,400 ft. W 78°10'	17,800 ft. W 77°50'	7,700 ft. W 78°15'	21,300 ft. W 78°15'	7,500 ft. W 77°55'	2,300 ft. W 80°17'30"
DATE COMPLETED		12-23-73	2-19-74	4-1-74	11-7-73	3-16-74	11-5-73	5-20-74	4-8-74	11-2-73	11-6-73
ELEVATION		1367 GR	1315 GR	2439 GR	1358 GR	1713 GR	1447 GR	1844 GR	1868 GR	2073 GR	1136 GR
TULLY		*6680-6810	*5153-	*7006-7035	*5302-	*6202-	5995-6070	*7205-7278	*7052-	*6537-6623	
ONONDAGA	LIMESTONE	7216-	5372-5420	7772-7796	5920-	6810-	7035-7050	8138-	7985-	7367-7389	*2480-2652
	CHERT	7234-	Needmore 5420-5503	7796-7899			7050-7070				
ORISKANY		Bois Blanc Ss 7372-7393 Oriskany Absent	5503-5543	7899-7915 Gas 7802-8000	5949-5963	6831-	7070-7120	8191-8194	8051- Gas 8049-8064	7389-7422 Gas 7392-7400	Bois Blanc 2652-2678 Oriskany Absent
HELDERBERG		7393-	5543-5678	7915-	5963-	6875-	7120-7138	8194-	8055-	7422-7485	2678-2714
KEYSER-BASS ISLAND			5678-5783		6074-						2714-2752
SALINA			5783-								2752-3380
GUELPH-LOCKPORT			6750-7010								3380-3618
BLACK WATER											
CLINTON			7010-								3618-
IRONDEQUOIT			7145-7150								3690-3700
MEDINA			7265-								3716- Gas 3778-3809
WHIRLPOOL			7503-7526								3898-3906
QUEENSTON			7526-								3906-
TOTAL DEPTH		7478	7603	8000	6158	6894	7138	8209	8064	7485	3936
DEEPEST FORMATION REACHED		Helderberg	Queenston	Helderberg	Bass Island	Helderberg	Helderberg	Helderberg	Helderberg	Helderberg	Queenston
RESULT		Old Well Deepened from 3515-7478 Dry Roaring Run Orisk. Ext. with Shallow Gas Production	Rice Pool Discovery of Shallow gas in Whitestown Field	730 Mcf Nat. 13,900 Mcf AF Gas Storage Rager Mountain Field	Well started as Deeper Pool Disc.; ended as Shallow Pool Ext. with shallow gas prod. E. Emporium Field Salt Run Pool	NSOG Abandoned Canoe Run Field	NSOG Abandoned New Field Wildcat	NSOG Abandoned Extension West Decatur	470 Mcf Nat. 1,872 Mcf AF 4,965 psi/72 hrs. West Decatur Extension	11,969 Mcf Nat. 31,272 Mcf AF Gas Storage Tamarack Field	400 Mcf AF 1,125 psi/3days Indian Spring Pool

Table 14. (Continued)

MAP NUMBER		73			76		74	75		
COUNTY Permit Number	Crawford 20426	Crawford 20429	Crawford 20422	Crawford 20423	Crawford 20441	Crawford 20427	Crawford 20444	Crawford 20455	Crawford 20424	Crawford 20417
NAME OF WELL	Lloyd R. Bean #2	Howard M. Gage #1	M. H. Haemer #3	M. H. Haemer #4	J. & G. Hoover #1	C. J. Loraine #2	Frank McOuff #1	Meadville Forging Fee #1	Earl R. Nicolls #1	John Raber #3
OPERATOR	Meridian O & G Enterprises	Consol. Gas Supply Corp.	Meridian O & G Enterprises	Meridian O & G Enterprises	Mercer Energy	Meridian O & G Enterprises	B. A. Floto & Assoc., Inc.	Meadville Forging Co.	Meridian O & G Enterprises	Meridian O & G Enterprises
TOWNSHIP	Spring	Cambridge	Summerhill	Summerhill	Summerhill	Summerhill	Venango	West Mead	Spring	Summerhill
QUADRANGLE	Girard I 443 **Conneautville	Cambridge Springs F 28	Linesville C 53	Linesville C 54	Linesville C 51	Linesville C 55	Cambridge Springs H 29	Meadville A 33	Girard F 441 **Conneautville	Linesville C 49
LATITUDE	14,250 ft. S 41°50'	30,300 ft. S 41°55'	1,900 ft. S 41°45'	3,150 ft. S 41°45'	16,250 ft. S 41°45'	1,300 ft. S 41°45'	21,000 ft. S 41°50'	26,600 ft. S 41°45'	14,950 ft. S 41°50'	5,150 ft. S 41°45'
LONGITUDE	3,650 ft. W 80°17'30"	5,100 ft. W 80°00'	12,950 ft. W 80°15'	13,350 ft. W 80°15'	18,700 ft. W 80°15'	13,450 ft. W 80°15'	15,950 ft. W 80°05'	400 ft. W 80°10'	750 ft. W 80°17'30"	15,950 ft. W 80°15'
DATE COMPLETED	10-23-73	12-31-73	12-31-73	12-18-73	1-8-74	12-6-73	2-15-74	7-8-74	11-20-73	9-23-73
ELEVATION	1157 GR	1351 GR	1254 GR	1284 GR	1327 GR	1266 GR	1250 GR	1115 GR	1129 GR	1319 GR
TULLY		*2651-2732					*2538-2608	2610-2670		
ONONDAGA LIMESTONE	*2452-2612	2868-3028	*2680-2836	*2640-2850	*2808-2960	*2668-2824	2734-3864	*2785-2978	2440-2640	*2748-2906
ONONDAGA CHERT										
ORISKANY	Bois Blanc 2612-2650 Oriskany Absent	Bois Blanc 3028-3067 Oriskany Absent	Bois Blanc 2836-2872 Oriskany Absent	2850-2860	Bois Blanc 2960-3002 Oriskany Absent	Bois Blanc 2824-2858 Oriskany Absent			2640-2650	Bois Blanc 2906-2943 Oriskany Absent
HELDERBERG	2650-2686	3067-3090	2872-2910		3002-3045	2858-2898		2978-3122		2943-2982
KEYSER-BASS ISLAND	2686-2722	3090-3132	2910-2948		3045-3085	2898-2936				2982-3024
SALINA	2722-3350	3132-3744	2948-3744		3085-3775	2936-3606				3024-3690
GUELPH-LOCKPORT	3350-3586	3744-4012	3744-3860	3655-3886 est	3775-4040	3606-3845			3354-3598	3690-3935
BLACK WATER										
CLINTON	3586-	4012-	3860-	3886-	4040-	3845-			3598-	3935-
IRONDEQUOIT	3660-3668	4067-4078	3936-3944	3958-3968	4093-4102	3922-3930	3970-3974	4077-4105	3668-3678	4009-4019
MEDINA WHIRLPOOL	3684- Gas 3758-3810	4104- 4272-4283	3952- G & O 4011-4064 4150-4156	3992- G & O 4050-4090	4132- 4306-4320	3956- G & O 3985-4050 4132-4138	3984-4110 4160-4168	4158-4233 Gas 4220 4296-4307	3702- Gas 3757-3771	4048- Gas 4086-4127 4220-4226
QUEENSTON		4283-	4156-		4320-	4138-	4168-	4307-4392		4226-
TOTAL DEPTH	3834	7175	4225	4171	4387	4205	4252	4392	3822	4228
DEEPEST FORMATION REACHED	Power Glen	Gatesburg	Queenston	Power Glen	Queenston	Queenston	Queenston	Queenston	Power Glen	Queenston
RESULT	1,000 Mcf AF 1,070 psi/3 days Indian Spring Pool	+Trenton-6205 Beekmantown-6950 Gatesburg-7020 Abandoned New Field	5 BOPO 500 Mcf AF 1,100 psi/3 days Indian Spring Pool	5 BOPO 500 Mcf AF 1,100 psi/3 days Indian Spring Pool	NSOG Abandoned New Pool Wildcat Indian Spring	30 BOPO 500 Mcf AF 1,125 psi/3 days Indian Spring Pool	NSOG Abandoned New Field Wildcat	10 Mcf Nat. 280 Mcf AF 1,450 psi/14 days Discovery West Mead Pool	1,000 Mcf AF 1,075 psi/3 days Indian Spring Pool	400 Mcf AF 1,075 psi/3 days Indian Spring Pool

COUNTY Permit Number		Crawford 20428	Crawford 20431	Crawford 20416	Crawford 20442	Crawford 20413	Elk 20328	Erie 20362	Erie 20365	Erie 20367	Erie 20373
NAME OF WELL		Phillip W. Robison #1	J. & H. Schmidt #3	S. F. Smith #2	O. & L. Steider #1	Helen Webb #2	Amoco-Sylvania #1	H. & C. Burns #1	Electric Materials Co. #1	Fiscus R. Unit #2	Leopold #1
OPERATOR		Meridian O & G Enterprises	Flanigan Brothers	Meridian O & G Enterprises	Mercer Energy, Inc.	Meridian O & G Enterprises	Amoco Production Co.	Minnesouri O & G Co.	Electric Materials Co.	Electric Materials Co.	Henry B. Kelsey
TOWNSHIP		Summerhill	Cussewago	Summerhill	Summerhill	Summerhill	Benzinger	Elk Creek	North East	North East	Fairview
QUADRANGLE		Linesville C 56	Cambridge Springs G 27	Linesville C 48	Linesville C 52	Linesville C 50	Crosby G 6	Girard A 444 **Conneautville	North East C 33	North East C 32	Erie G 122
LATITUDE		5,400 ft. S 41°45'	16,650 ft. S 41°50'	3,450 ft. S 41°45'	18,900 ft. S 41°45'	4,100 ft. S 41°45'	27,750 ft. S 41°35'	3,150 ft. S 41°52'30"	12,100 ft. S 42°15'	15,700 ft. S 42°15'	23,400 ft. S 42°05'
LONGITUDE		13,400 ft. W 80°15'	22,350 ft. W 80°10'	16,000 ft. W 80°15'	14,600 ft. W 80°15'	18,900 ft. W 80°15'	9,350 ft. W 78°25'	650 ft. W 80°20'	19,450 ft. W 79°45'	19,500 ft. W 79°45'	14,750 ft. W 80°10'
DATE COMPLETED		1-6-74	12-27-73	10-31-73	2-25-74	8-7-73	9-28-73	3-74	2-18-74	3-25-74	9-8-74
ELEVATION		1286 GR	1250 GR	1330 GR	1270 GR	1336 GR	1905 GR	1088 GR	812 GR	862 GR	935 GR
TULLY					*2610-2648		*5772-	*2028-	*1255-	*1350-	*1529-1599
ONONDAGA	LIMESTONE	*2722-2878	*2580-	*2742-2898	2774-2925	*2746-2908	6288-	2208-	1500-	1562-	1758-
	CHERT										
ORISKANY		Bois Blanc 2878-2914 Oriskany Absent	2777-	Bois Blanc 2898-2934 Oriskany Absent	Bois Blanc 2925-2970 Oriskany Absent	Bois Blanc 2908-2958 Oriskany Absent	6326-	2460-2468		1748-1760	2030-2042
HELDERBERG		2914-2954		2934-2966	2970-3015	2958-2982	6340-				
KEYSER-BASS ISLAND		2954-2994		2966-3014	3015-3055	2982-3022	6420-		1732-	1760-	
SALINA		2994-3654		3014-3686	3055-3747	3022-3686	6484-6684				
GUELPH-LOCKPORT		3654-3908	3495-	3686-3928	3747-4008	3686-3928			2190-	2270-	
	BLACK WATER										
CLINTON		3908-		3928-	4008-	3928-					
	IRONDEQUOIT	3982-3992	3816-	4000-4008	4062-4070	3998-4006		3392-	2505-		2922-2949
MEDINA		4020- G & O 4055-4109	3885- Gas 3895-3978	4034- G & O 4066-4125	4100-	4034- G & O 4058-4127		3422- Gas 3473-3596	2550- Gas 2573-2688	2640- Gas 2650-2725	2949-
	WHIRLPOOL	4175-4182	4024-	4212-4218	4274-4288			3594-	2674-	2755-	3115-3122
QUEENSTON		4182-	4032-	4218-	4288-			3597-	2790-2794	2768-	3122-
TOTAL DEPTH		4186	4065	4225	4388	4203	6742	3629	2794	2851	4996
DEEPEST FORMATION REACHED		Queenston	Queenston	Queenston	Queenston	Power Glen	Salina	Queenston	Queenston	Queenston	Trenton
RESULT		5 BOPD 1,000 Mcf AF 1,150 psi/3 days Indian Spring Pool	300 Mcf Nat. 1,500 Mcf AF 1,180 psi/48 hrs. Indian Spring Pool	40 BOPD 1,075 psi/3 days Indian Spring Pool	NSOG Abandoned New Pool Wildcat	30 BOPD 200 Mcf AF 1,100 psi/3 days Indian Spring Pool	NSOG Abandoned Benzinger Extension	1,119 Mcf AF 780 psi/4 days Lundys Lane Extension	350 Mcf AF 960 psi/12 days Discovery Orchard Beach Pool, North East Field	880 Mcf AF 960 psi/24 hrs. Orchard Beach Pool Extension	Trenton 4840-4996 NSOG New Field Wildcat

Table 14. (Continued)

MAP NUMBER		71	69	83	81	82	101	86	100	99	
COUNTY Permit Number		Erie 20356	Erie 20355	Fayette 20144	Fayette 20140	Fayette 20131	Forest 21083	Indiana 22703	McKean 31252	McKean 30629	McKean 30598
NAME OF WELL		W. & A. Rick #1	E. & S. Stasiewski #1-A	Frazee Lumber Co. #1	Alice M. Shaffer #1	C. B. Smith Trust Estate #2	E. S. Collins-Clinger Tract #1	Charles H. Miller, etux #1	Amoco-Penn Gas #1	Amoco-Witco #1	Kewanee Oil Co. #5
OPERATOR		North East Nat. Gas Co.	North East Nat. Gas Co.	Snee & Eberly, et.al	Amoco Production Co.	Peoples Natural Gas Co.	Amoco Production Co.	T. W. Phillips G & O Co.	Amoco Production Co.	Amoco Production Co.	Felmont Oil Corp.
TOWNSHIP		McKean	Fairview	Wharton	Bullskin	Wharton	Kingsley	North Mahoning	Wetmore	Keating	Corydon
QUADRANGLE		Erie G 121	Erie G 120	Uniontown F 47	Donegal D 33	Uniontown G 46	Sheffield D 6	Smicksburg F 37	Kane A 3	Bradford I 10	Kinzua B 23
LATITUDE		27,000 ft. S 42°05'	23,300 ft. S 42°05'	30,150 ft. S 40°55'	12,900 ft. S 41°10'	23,650 ft. S 39°50'	25,200 ft. S 41°45'	3,800 ft. S 40°55'	29,750 ft. S 41°45'	2,000 ft. S 41°50'	12,800 ft. S 42°00'
LONGITUDE		5,600 ft. W 80°10'	19,900 ft. W 80°10'	22,000 ft. W 79°30'	8,900 ft. W 79°25'	4,800 ft. W 79°40'	11,900 ft. W 79°10'	20,750 ft. W 79°00'	2,700 ft. W 79°55'	21,900 ft. W 78°30'	10,000 ft. W 78°50'
DATE COMPLETED		1-18-74	1-8-74	8-22-74	4-2-74	8-10-73	4-16-74	10-4-74	7-3-74	2-18-74	1-14-74
ELEVATION		950 GR	912 GR	1963 GR	1998 GR	2262 GR	1296 GR	1390 GR	1842 GR	2180 GR	1744 GR
TULLY		*1598-	*1486-	*7058-7132	*7980-	*7365-7484	*4146-	*6588-6724	4800-4810	+4800-4865	*3632-3648
ONONDAGA	LIMESTONE	1813-	1890-	7571-7600 Gas 7588-7696	8729-8752	7926-7946	4465-	7174-7197	5065-5110	5170-5360 Gas 5184-5270	3950-4029
	CHERT			7600-7735	8752-	7946-8096		7197-			
ORISKANY		2097-2115	1942-1970	7735-7850	8897-	8096-8203	4510-		5110-5120	Oriskany Absent	4029-4037
HELDERBERG				7850-		8203-8447			5120-5210	5360-5420	
KEYSER-BASS ISLAND						8440-	4648-			5430-5470	
SALINA						8773-	Salt @ 4890		5210-6135	5470-6385	
GUELPH-LOCKPORT						Wills Creek-9609	5574-		6135-6445	6385-6700	
BLACK WATER						McKenzie-9910					
CLINTON						Rose Hill-10360			6445-6670	6700-6810	
IRONDEQUOIT		2999-	2854-			10720-10800					
MEDINA		3017-	2880-			Cast-10800-10916	Tuscarora 5947-		6670-6780	6810-6940	
WHIRLPOOL		3188-	3042-			Tusc-10916-11244					
QUEENSTON		3196-	3051-			11244-	6088-		6780-	6940-	
TOTAL DEPTH		3233	3102	7960	8941	11335	6139	7200	6832	7015	4037
DEEPEST FORMATION REACHED		Queenston	Queenston	Helderberg	Oriskany	Queenston	Queenston	Onondaga	Queenston	Queenston	Oriskany
RESULT		NSOG Abandoned McKean Field Extension Deeper Pool	NSOG Abandoned New Field Wildcat	47 Mcf Nat. 3,000 Mcf AF 3,293 psi/48 hrs. Extension	NSOG Abandoned New Field Wildcat	SSG Abandoned Deeper Pool Test.	NSOG Abandoned Deeper Pool Test	Dry in deep horizons. Plugged back and completed as	NSOG Abandoned Deeper Pool Test Wetmore	200 Mcf Nat. 3,000 Mcf AF 2,841 psi/79 hrs. Deeper Pool Disc.	NSOG Abandoned Corydon Field

Permit Number		31392	20080	20081	20468	20474	20458	20467	20047	20044	20057
NAME OF WELL		Mars Company Wt. 2666, #1	Homer Amon #1	K. E. Linn #1	North Penn Gas Co. #1	Pa. Tract 176 #1	Pa. State Forest Tract 181 #1	Pa. Tract 204 #1	Ada Bittner #1	Dean M. Hottle #1	Harry P. Dewey #1
OPERATOR		Amoco Production Co.	United Natural Gas Co.	United Natural Gas Co.	Earl H. Linn, et.al	Flint Oil & Gas, Inc.	Earl H. Linn	Fairman Drilling Co.	Amoco Production Co.	Amoco Production Co.	Amoco Production Co.
TOWNSHIP		Sergeant	Worth	Worth	Eulalia	Stewardson	Abbott	Portage	Larimer	Lincoln	Gaines
QUADRANGLE		Mt. Jewett C 3	Stoneboro I 15	Stoneboro I 14	Conrad O 61	Galeton G 56	Conrad F 60	Emporium O 40	Berlin G 2	Somerset H 33	Galeton C 54
LATITUDE		29,250 ft. S 41°45'	26,650 ft. S 41°20'	26,900 ft. S 41°20'	17,100 ft. S 40°40'	17,800 ft. S 41°35'	8,700 ft. S 41°40'	8,350 ft. S 41°40'	25,950 ft. S 39°50'	5,500 ft. S 40°05'	22,000 ft. S 41°45'
LONGITUDE		11,000 ft. W 78°30'	11,000 ft. W 80°00'	8,500 ft. W 80°00'	450 ft. W 77°55'	18,100 ft. W 77°40'	17,500 ft. W 77°45'	6,350 ft. W 78°10'	2,750 ft. W 78°55'	8,500 ft. W 79°10'	12,800 ft. W 77°30'
DATE COMPLETED		7-31-74	10-4-73	10-1-73	2-28-74	7-26-74	10-28-73	2-14-74	7-20-74	2-1-74	2-12-74
ELEVATION		2085 GR	1478 GR	1390 GR	2196 GR	2019 GR	2441 GR	2128 GR	2444 GR	1947 GR	1569 GR
TULLY			*3952-	*3864-	*6155-6220	*6242-6318	*6010-6070	*4723-4911	4300-4606	*7667-	+4740-
ONONDAGA	LIMESTONE		4150-	4066-	6878-6940	7050-7070	6778-6844	5881-5921	5414-	8463-	5630-5650
	CHERT									8485-	
ORISKANY					Bois Blanc 6940-6948 Oriskany Absent	7070-7102	Bois Blanc 6844-6850 Oriskany Absent	Bois Blanc 5921-5933 Oriskany Absent	?5520-	8600-	5650-5666
HELDERBERG					6948-6975	7102-7165	6850-6885	5933-6100	?5664-	8710-8759	5666-
KEYSER-BASS ISLAND					6975-7150	7165-7210	6885-	6100-6224			
SALINA			4455-	4372-	7150-			6224-7806			5840-
GUELPH-LOCKPORT			5214-	5088-							
	BLACK WATER		5358-	5239-							
CLINTON			Gas 5380-5440	Gas 5267-							
	IRONDEQUOIT										
MEDINA											
	WHIRLPOOL										
QUEENSTON											8820-
TOTAL DEPTH		6160	5443	5324	7302	7210	6909	7806	5860	8759	15097
DEEPEST FORMATION REACHED			Lockport	Lockport	Salina Group	Keyser-Bass Is.	Keyser	Salina	Keyser?	Helderberg	Gatesburg
RESULT		Shallow gas Hazelhurst Extension	145 Mcf Nat. 210 Mcf AF 1,960 psi/48 hrs. Kilgore Pool	220 Mcf Nat. 1,960 psi/48 hrs. Kilgore Pool	N50G Abandoned New Field Wildcat	N50G Abandoned New Pool Wildcat	N50G Abandoned New Field Wildcat	N50G Abandoned New Field Wildcat	N50G Abandoned New Field Wildcat	Dry-deep horizons 570 Mcf Nat. 1,050 psi/48 hrs. Shallow Pool Discovery Enoch Pool	Trenton-11520 Beekmantown-13220 Gatesburg-14860 N50G Abandoned Wildcat

Table 14. *(Continued)*

MAP NUMBER		91	78								
COUNTY Permit Number		Tioga 20062	Venango 22642								
NAME OF WELL		Pa. Tract 192, WN-1285	Grant Fee #348								
OPERATOR		Consol. Gas Supply Corp.	Pennzoil Co.								
TOWNSHIP		Elk	Sugarcreek								
QUADRANGLE		Galeton H 53	Franklin F 3								
LATITUDE		12,400 ft. S 41°35'	900 ft. S 41°25'								
LONGITUDE		3,600 ft. W 77°35'	16,200 ft. W 79°45'								
DATE COMPLETED		12-5-73	11-12-73								
ELEVATION		1407 GR	1420 GR								
TULLY		*5288-5380	*4074-								
ONONDAGA	LIMESTONE	6208-6232	4330-								
	CHERT										
ORISKANY		6232-6242									
HELDERBERG		6242-	4450-								
KEYSER-BASS ISLAND			4550-4587								
SALINA			4587-								
GUELPH-LOCKPORT			5400-								
BLACK WATER											
CLINTON											
IRONDEQUOIT			5817-								
MEDINA			5851-								
WHIRLPOOL			Gas 5888-5978								
QUEENSTON			6030-								
TOTAL DEPTH		6287	6085								
DEEPEST FORMATION REACHED		Helderberg	Queenston								
RESULT		NSOG Abandoned New Pool Wildcat	220 Mcf AF 1,375 psi/48 hrs. Discovery Galloway								